



JEAN FRANÇOIS GALAUP
DE LA PÉROUSE.

Chef d'Escadre des Armées Navales born at Alby in 1741.

A

VOYAGE
ROUND THE WORLD,
IN THE YEARS 1785, 1786, 1787, AND 1788,

By J. F. G. DE LA PÉROUSE:

PUBLISHED CONFORMABLY TO THE DECREE OF THE

NATIONAL ASSEMBLY,

OF THE 22^D OF APRIL, 1791,

AND EDITED BY

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IN THREE VOLUMES.

TRANSLATED FROM THE FRENCH.

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ADVERTISEMENT

OF THE

ENGLISH EDITOR.

THE voyages of our various circumnavigators, especially of the immortal Cook, have excited an almost universal interest in the perusal of voyages and travels; and we conceive that the narrative of a scientific expedition, fitted out expressly for the purpose of verifying and completing the discoveries of the English, by a nation the second in maritime importance, and inferior to none in philosophy and the arts, has a very valid claim to the notice of the British public.

The total loss of the frigates *BOUSSOLE* and *ASTROLABE*, together with their able

commander LA PEROUSE, and the rest of the officers and men of science that were associated with him in the hazardous office of exploring unknown coasts, necessarily renders this work less perfect than it would otherwise have been, as well in respect to matter as arrangement: several curious particulars are given in distinct memoirs, which might, in the opinion of some, have appeared to more advantage in a continued narrative; and relative to other circumstances there are only loose memoranda, which were probably intended as the basis of elaborate dissertations. We did not, however, think ourselves at liberty to omit or abbreviate any thing, or to alter its form or place; *in all respects, therefore, this translation is an exact copy of the original.*

If any difference be perceived in the style of the several parts of the translation, it is partly to be attributed to the unavoidable necessity, occasioned by competition, of bringing the
work

work before the public with the least possible delay, in consequence of which, more than one gentleman has been employed : as, however, in the original work, the narrative and the various political and scientific documents, are written by the respective persons embarked in the expedition who were entrusted with the care of the various departments, the variety in the style of the translation may be principally ascribed to the want of uniformity in the style of the original. A few occasional and immaterial errors and irregularities may very possibly have escaped the strictest attention ; but especial care has been taken to ensure the accuracy of the nautical parts, and of the scientific memoirs on subjects of natural history and geography.

With respect to the plates, we have thought ourselves fully justified in the omission of a few which were either duplicates of those given,

or copies from English voyages, for the purposes of comparison or minute amplification, and by so doing, we have been enabled to reduce the price of the work, without deducting in any degree from its real utility.

In regard to Longitude, we have uniformly retained that which is deduced from the meridian of Paris; our readers can, if necessary, reduce it to longitude from Greenwich, by adding or deducting $2^{\circ} 20' 15''$, according as it is east or west respectively. We have also retained the French weights and measures; these the reader can reduce to the English standard, the Paris pound avoirdupoise being to the English as 27 to 25; the Paris foot 12.798 of our inches, and the French toise 6 Paris feet.

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The BINDER is requested to place the nautical tables at the end of the third volume, and to guard the large plates.

ERRATA.

ERRATA.

- Page 74 line 10th from bottom, for basin read basin.
- 123 line 3 from bottom, for north read north-east.
- 135 line 11 from bottom, for north-north-west read west-north-west.
- 136 line 2 from bottom, for half east read half north-east.
- 149 line 6 from bottom, for 2° 30' east read 2° 3' north-east.
- 227 bottom line, the letters in the word equator are deranged.
- 236 line 10 from top, after the word sea add a comma.
- 248 line 3 from bottom, for reagents read re-agents.
- 249 line at top of the page, for reagents read re-agents.
- 291 line 11 from top, divide illformed by a hyphen.
- 345 line 15 add a comma after the word which.
- 394 line 11 from bottom, for 5 degrees distant read 5 leagues distant.
- 397 line 9 from top, for longitude east of Paris read west of Paris.

THE FRENCH EDITOR'S PREFACE.

THE public, familiarized with the melancholy reflection of the loss of the two ships in the unfortunate expedition commanded by La Pérouse, will be surprized at the publication of the journal of his voyage. The decree of the constituent assembly, which ordered the engraving of the charts and the printing of the journals sent home by this navigator, might have announced, however, that we were not entirely deprived of the benefits of his voyage. His foresight made him not only take advantage of, but seek for every opportunity of sending his journals to Europe. It is to be regretted, that the self-love of the scientific persons embarked along with him did not allow them, in like manner, to dispatch to their country all the fruits of their labours; we should not in that case have had to regret the almost total loss of them. La Pérouse, occupied with the difficult and numerous details, which the command of an expedition, as important as dangerous, must necessarily include, forced at every step to judge and foresee, and consequently to modify his ideas according to circumstances, could not collect with order, or arrange with

VOL. I. B method,

2 THE FRENCH EDITOR'S PREFACE.

method, the materials from which he was to compose a history of his voyage. These materials must necessarily appear still more confused and misplaced to the view of an editor, who was personally a stranger to the voyage.

As nothing which may contribute to extend the progress of the human mind ought to be neglected in voyages of discovery, scientific men and artists form an essential part in such expeditions: upon their return, each arranges his own materials, and gives to the particular object of his study that degree of perfection, of which it is susceptible; from the well-understood connection of these different parts results a complete relation, where all is contained, and each in its proper place. In this instance, by an unexampled fatality, our new argonauts have all perished; and, it has fallen to my lot, alone, by collecting whatever has escaped the wreck, to supply that accurate and forcible representation of the navigators, who would not have expressed any thing, but what they themselves had experienced.

In giving way, not without reluctance, to the solicitations, which made me undertake this painful though honourable task, I did not deceive myself with respect to the difficulties, which I must necessarily have to encounter in a work, all the parts of which it was not easy equally to compromise and to adjust.

The

The public will undoubtedly regret with me, that the Ex-minister of marine Fleurieu, at this time member of the national institute, and of the board of longitude, instructed as he is in subjects of this nature, of such rare and distinguished talents, and who would willingly have taken upon himself the editing of this work, was forced, by circumstances, to relinquish it.

The same interest which induced me to manifest, in the tribune of the constituent assembly, a strong zeal for the publication of this voyage, for the profit of the much esteemed widow of La Pérouse, occasioned me to endeavour to direct the choice of the government to a naval officer, capable of supplying the place of him, who had been at first appointed to the undertaking. But France had already lost most of her eminent sea officers, and the rest were either on service, or had voluntarily withdrawn themselves: it was only in the power of the minister to appoint a man, who had at least applied himself to the study of natural history and mathematics, an essential qualification for such a work. The choice of a man, who should possess in a preferable degree this kind of knowledge, was, besides, conformable to the intention of La Pérouse; for he wrote to one of his friends nearly in these words. "If my journal should be printed before my return, let care be taken not to entrust it to a man of

4 THE FRENCH EDITOR'S PREFACE.

letters, who will sacrifice to the turning of a phrase the proper word, which may appear harsh and barbarous to him, but which the seaman and the man of science would prefer, and will look for in vain; or, perhaps, laying aside all the nautical and astronomical details, and desirous of making of it an interesting romance, he will commit errors, for want of knowledge which his education may not have permitted him to acquire, errors which will prove fatal to my successors; but choose an editor versed in mathematical knowledge, who may be capable of calculating, of combining my data with those of other navigators, of correcting the errors which may have escaped me, and not commit others himself. Such an editor will dive to the bottom; he will suppress nothing essential; he will give the technical details in a rough unpolished style, but concisely and like a seaman, and he will perform his task well, by publishing the work as I should have wished to do it myself."

This desire having constantly served me as a rule, I declare to those who, in reading, have no other object than amusement, that they ought not to proceed further; I have not laboured for them, but only for seamen and men of science. It has been my endeavour in a work, the matter of which is more important than the form,
and

and of which the best praise will be fidelity in the relation of facts, and accuracy in expression, to be clear and concise; I have made no sacrifice to grace at the expence of truth: this confession is my excuse, at the same time that it bespeaks the indulgence of the reader.

It is with this view, that I have religiously respected the character of style in each author, in merely subjecting their memoirs to the known rules of language; but when an idea has presented itself to me, which might serve as a connection to others, an expression which might render an image more perfect, or more obvious, or give to a phrase more harmony without altering its import, I have considered myself at liberty to employ it.

The work about to be presented to the reader would' doubtless have been more valuable, had it proceeded from the pen of the ex-minister Fleurieu, who might have enriched it by his profound knowledge: I ought, however, to make it known, that I have consulted him as often as I have been at a loss, and I have always found in him that complaisance and modesty, which are the inseparable companions of real talent and science.

If to collect, to dispose, to arrange methodically all the parts of a work like this, were a difficult enterprize, the particulars relating to its publication,

6 THE FRENCH EDITOR'S PREFACE.

lication, the toils, the researches, and inquiries, which the most active zeal alone could go through, and unforeseen obstacles, appeared to render it impracticable.

The decree for its being printed was passed in the year 1791, and nothing was begun in 1793, the period at which I was entrusted with it. A paper money every day decreasing in value, occasioned the bargains and agreements with the artists and printers to be broken almost as soon as made, or induced them to oppose my efforts with a discouraging inertness, founded upon the hope of better times; public opinion bordering on madness, which then forced men to accommodate to the times, in opposition to the truth of history, the appellations and customs of other times, compelled me to remain inactive during more than a year; after all this, a new paper money, and the embarrassments of the government when specie re-appeared, have been the physical and moral causes of the hindrance I have met with.

To enable me to reconcile the difficulties of editing, which arose out of the circumstances of the moment, I was strongly importuned to write the voyage in the third person. Thus becoming the historian, and appropriating to myself the materials of this work, I should have thrown

the navigator into the back ground: this proposal did not gain upon my self-love; I sacrificed it to the interest which is always inspired by a man who relates his own feelings, who describes the difficulties of his own situations, and who makes you a partaker in his pleasures and pains.

If circumstances have surrounded me with obstacles during my labour, the result will prove, at least, that government has not ceased to protect the sciences and the arts, during the most astonishing of revolutions, which has raised up against it a war as general as burdensome.

I have explained the nature and difficulties of my labour; I will now speak of the form of the work, of its distribution, and of the care taken in the execution of it.

The title of *Voyage round the World*, which I have given it, although strictly speaking it could not have been acquired but by the return of La Pérouse into one of the ports of France, will nevertheless not be contested, because we may consider a Voyage round the World as terminated, when, departing from Europe, we arrive at China, after having doubled Cape Horn, and crossed the South Sea: besides, the events that occurred during their year's voyage, after their arrival at China, were more striking and hazardous, than a mere return to Europe.

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The work, consisting of four volumes in 8vo, and of an atlas in 4to, is divided in the following manner.

The first volume contains all the preliminary articles relative to the expedition; I have only added to them the translation of a Spanish voyage, the manuscript of which was transmitted by La Pérouse, and which I thought I could not place any where else, without rendering the volumes too unequal.

A celebrated author rescued from oblivion the magnanimous conduct of D'Asias, who sacrificed his life to save the French army, by calling out, "*This way, Auvergne, here is the enemy.*" The society of natural history at Paris, had the merit of fixing the attention of the representatives of the nation upon the expedition of La Pérouse, by the petition it presented the 22d of January, 1791. The assembly lost no time in taking it into consideration, though they were then engaged in very important business.

The two decrees which passed in consequence, as honourable to the assembly as to those who were the object of them, are placed at the head of the work; they breathe humanity and sensibility, and will for ever say to those who are willing to tread in the steps of La Pérouse, "When you shall have finished your career through all surrounding dangers, though you
should

should fail in the attempt, you may rest satisfied, that a grateful country will honourably consecrate your name, in the temple of memory."

I have not confined myself to the custom of publishing the names of the officers, and men of science, alone, who make up a part of such expeditions: the publication of an exact list of the ships companies appears to me to be an act more conformable to justice, and to the principles of the French government; I have thought also, that such a register will henceforth be the only register of the dead, accessible to the families of our unfortunate navigators.

The instructions and the geographical notes which follow, written by the ex-minister of the marine Fleurieu, are too precious a model not to be rendered public: it is, besides, the only answer I choose to make to a note of George Forster, misrepresenting the truly scientific motives which determined this expedition. I regret, that a man whom I esteem should have expressed himself thus, in his *Voyage Historique et Pittoresque sur les rives du Rhin*. (Vol. I, page 311, of the French translation.)

"At the period, when the interesting and unhappy La Pérouse set off, to open new regions to commerce and philosophy, a minister presented to the council a memorial upon the incalculable advantages of this enterprize.

"This

17 THE FRENCH EDITOR'S PREFACE.

“ This memorial, though long, was read with
 “ eagerness, notwithstanding it contained only a
 “ single idea, it was this: if you wish, Sire,
 “ said the minister, *to turn aside the attention of*
 “ *your subjects from this dangerous anglo-*
 “ *mania, this passion for liberty, so destructive of*
 “ *good order and of peace; amuse them with*
 “ *new ideas, beguile their leisure, by images*
 “ *the bewitching variety of which may feed their*
 “ *frivolity. It is better, that they should em-*
 “ *ploy themselves in contemplating the waggish*
 “ *tricks of Chinese monkies, than in following*
 “ *the present fashion which leads them to admire*
 “ *the horses and philosophers of England.*”

The second and third volumes comprize the journal of the whole voyage of the two frigates; together with the result of the astronomical and meteorological observations.

It is to the progress of astronomy, that we owe the means of determining the longitudes at sea, with much greater exactness than formerly: to announce that the astronomer Dagelet, member of the academy of sciences, had taken the superintendance of this branch upon himself, is to inspire the greatest confidence in its accuracy, as well as in that of the tables and charts which result from it.

If the journal do not always agree with the log book and the charts, it is because it was not possible

possible to defer printing the journal till their complete examination. These differences, moreover, are neither frequent, nor considerable; when they occur, the preference ought to be given to the log, and above all, to the charts which have been executed under the direction of the first hydrographer of the marine, Buache, member of the national institute, and of the board of longitude. I owe in this place a particular acknowledgment, for the pains he has been good enough to take upon himself, in order to second me in this important part.

Throughout the whole course of the work, the longitudes in which the meridian is not expressed are reckoned from that of Paris*.

I have endeavoured to be very exact in writing proper names, and names of places; but these last varying considerably, according to the native language of their different authors, it has been necessary to adopt, in writing these words, the most generally received orthography.

The fourth volume is composed of notes and detached pieces, forwarded to government, by the men of science, employed in the expedition.

* The English reader is doubtless aware, that the meridian of Paris is situate $2^{\circ} 20'$ east of that of London. The difference consequently of the longitudes mentioned in the voyage, and expressed in the English atlases, will be reconciled by the subtraction or addition of those $2^{\circ} 20'$. *Translation.*

and of those which I could otherwise collect together. With this view, I made applications both to the former academy of sciences, and such individuals, as I suspected to have had correspondence with the associates of La Pérouse, in order to gather together whatever might have been sent: they were, however, fruitless; I have only been able to procure some scattered fragments, which were found in the *Journal de Physique*, and I lost no time in putting them together in this volume.

I have in the course of the work, added notes wherever I thought they might be useful, distinguishing them by the initial letters of the words *French Editor*.

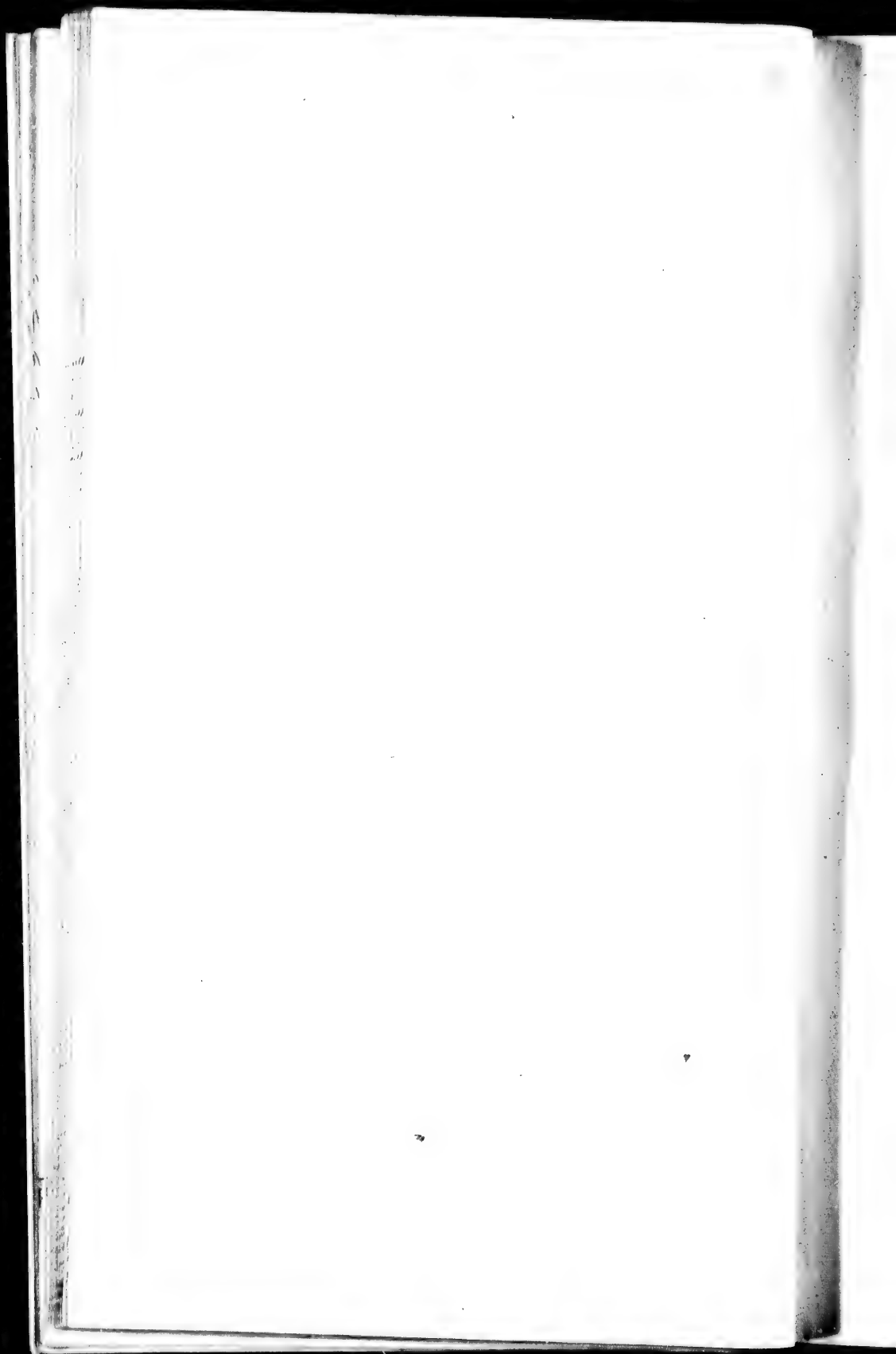
For the facility of turning to any particular subject, I have added an index at the end of the work.

The number, the size, and the beauty of the engravings and charts, determined me to collect them in a separate atlas, and of a larger form. I thought that a national work, executed with so much care, merited this precaution for its preservation. If it be not generally approved of, I shall only observe, that such is the size of the fine edition, of *Cook's Third Voyage*, published by the order and at the expence of the English government.

To

To bring this work at last to a completion, I have been obliged to give out the drawings and designs to a greater number of engravers, than the eminent ones, to whom they were first entrusted: thence has resulted an inevitable want of uniformity and of perfection; I have, however, neglected nothing to render it as little perceptible as possible.

On the whole, if this work be such as might have been expected from the materials which have been put into my hands, after the unexpected loss of our circumnavigators, my most agreeable recompense will be to have fulfilled the views of government, and to have co-operated in the monument of gratitude, which it has been desirous of erecting to their memory.



PRELIMINARY DISCOURSE

OF THE

FRENCH EDITOR.

ALL Europe, by the favourable reception given to the accounts of modern circumnavigators, has appeared to testify its regard for the progress of science and natural history; but it must be confessed, that, among the numerous admirers of works of this kind, some have mere amusement in view, others, by a proud comparison of our customs and manners with those of savages, would establish the superiority of civilized nations over the ruder tribes of mankind. Philosophers alone, the least numerous class of society, seek in them, and generally with success, materials with which to enlarge the sphere of their knowledge.

The narratives of voyages of discovery may be reckoned among the most interesting books of modern history: man, naturally the lover of whatever is new and extraordinary, transports himself in thought to distant regions; he identifies himself, as it were, with the navigator; he shares in his dangers, his pains, and his pleasures, and becomes his inseparable companion, by the diversity of the objects which attach him, and gratify his curiosity.

Under

Under this latter point of view, there is no doubt, but that extracts from voyages, such as Prevost has given us, disengaged from all the wearisome and dry details concerning astronomy and navigation, are more agreeable to read than the originals; but these extracts are not the source, whence the mariner and the man of science can expect to draw knowledge, because the materials having thus passed the crucible of the man of letters, come out sparkling, light, and deprived of the solid principle of science, which is destroyed by being altered.

The authors or translators of works of the nature of this we now offer to the public, have almost always given an account of preceding discoveries. They thus presented to the view a general sketch of the successive acquisitions to geography, and at the same time exhibited a catalogue of the works in which they are contained. I shall not repeat a detailed enumeration, which may be found elsewhere, but shall limit myself to the giving a complete chronological list of the navigators, to whom we owe discoveries in the South Sea.

	Years.
MAGELLAN, a Portuguese, in the service of Spain,	1519
GARCIA DE LOAES or LOAYSA, ditto, ditto,	1525
ALPHONSO DE SALAZAR, a Spaniard,	1525
ALVAR SAVAEDRA, ditto,	1526
FERDINAND GRIJALVA, and ALVAREDO, ditto,	1537
GAETAN, ditto,	1542
ALVAR	

PRELIMINARY DISCOURSE.

17

ALVAR DE MENDANA, a Spaniard,	1567
JUAN FERNANDEZ, ditto,	1576
DRAKE, an Englishman,	1577
THOMAS CAVENDISH, ditto,	1586
Sir RICHARD HAWKINS, ditto,	1594
ALVAR DE MENDANA, a Spaniard,	1595
OLIVIER DE NOORT, a Dutchman,	1598
PEDRO FERNANDEZ DE QUIROS, and LUIS VAES DE TORREZ, Spaniards,	1606
GEORGE SPILBERG, a Dutchman,	1614
LE MAIRE and SCHOUTEN, Dutchmen,	1616
L'HERMITE, a Dutchman,	1623
ABEL TASMAN, ditto,	1642
ANTOINE LA ROCHE, a Frenchman,	1675
COWLEY, an Englishman,	1683
DAMPIER, ditto,	1687
DAVIS, ditto,	1687
JOHN STRONG, ditto,	1689
GEMELLI CARRERI, a Neapolitan,	1693
BEAUCHENE GOVIN, a Frenchman,	1699
WILLIAM FUNNELL, an Englishman,	1703
WOODS ROGERS, ditto,	1708
LOUIS FEUILLE'E, a Frenchman,	1708
FRE'ZIER, ditto,	1712
GENTIL DE LA BARBINAIS, ditto,	1715
JOHN CLIPPERTON and GEORGE SHELVOCKE, Englishmen,	1719
ROGGEWEIN, a Dutchman,	1722
ANSON, an Englishman,	1741
LE HEN-BRIGNON, a Frenchman,	1747
BYRON, an Englishman,	1764
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The last voyage of Cook was scarcely made known, by the tragical end of the illustrious chief of the expedition, when France, availing herself of the leisure afforded by a peace which she had just concluded, considered it as a duty annexed to her rank among the principal maritime powers, and still more to her zeal and abilities for the advancement of science, to plan a voyage of discovery, in order to concur in perfecting the knowledge of the globe, which we have so long inhabited. If our acquaintance with it be this day advanced; if the position of every one of its known parts be henceforward ascertained; in short, if every step we take bring us nearer to the desired object; we owe it to the progress of astronomy. This affords us, in the distance of stars, the movements of which are accurately determined, fixed bases, that enable us to determine the longitude in the midst of an immense ocean, with a precision sufficient for the safety of navigation, previous to which we were obliged to substitute an almost arbitrary approximation, which exposed us to the greatest mistakes. By these established astronomical truths, we are henceforward

henceforward assured of the fruits of our expeditions, and the future perfection of Geography.

There exist means no doubt of hastening this happy result, and this is the proper place to throw out some ideas upon so important an object.—The means might be agreed upon in a Congress formed by the agents of the principal maritime powers, willing to participate in the glory of such an enterprize.

The Congress, composed of astronomers, hydrographers, and navigators, should begin by drawing up an account of all the ancient discoveries, that have hitherto been left unverified; an account of all the parts of the globe where there are still discoveries to be made or completed, or any further particulars to be inquired into; another object of their attention should be to obtain a table of the seasons, of the prevailing winds, of the monsoons, currents, refreshments, and succour to be hoped for in every latitude of the two hemispheres.

According to this arrangement, general instructions should be drawn up for the use of the commanders in each expedition; and to prevent the useless trouble of many projects, tending to the same end; the whole of the discoveries to be made should be divided among the maritime powers of Europe, regard being had to the pos-

sessions and establishments, which might respectively facilitate the enterprizes of each nation.

If England, Spain, Holland, Portugal, Russia, the United States of America, and France, would defray the expence of an expedition every three years, we might be certain, that in less than twenty years geography would attain its utmost limits.

Undoubtedly France would have continued to favour the progress of geography, if, for some time past, interests of far greater importance, and an expensive war to support these interests, had not wholly occupied her, and contracted all her exertions; but peace, by recalling, in a great measure, the attention of government to the sciences and arts, promises us new expeditions for their benefit.

When these enterprizes are taken up in an enlarged view, all the sciences are gainers by them. Although the philosopher be in a great measure stationary, the great results of voyages become not less a part of his domain; ready in collecting the observations of the navigator, he possesses himself of his ideas, unfolds them, and by analyzing and classing the sensations which have given birth to them, connects them to the general system; thus communicating new life to every part of science.

If

If navigation, thus enlarged, may be expected to contribute powerfully to extend the limits of the human understanding, it is the part of government, with this view, to excite the exertions of ability, to reward its success, to collect and publish its discoveries, to receive and weigh all the hints, thoughts, and views of genius, and to attract from every quarter all those who, by their merit and their labours, belong to every country and to every age, without any regard to their opinions upon other subjects, unconnected with the great business in hand.

This plan would naturally involve the examination of some important questions in geography, and especially that of an universal meridian; for there is not a geographer, who has not experienced the inconvenience of the variety of meridians. It is necessary to be perpetually on our guard against mistakes; the smallest comparison to establish between the meridians rendering it necessary to add or subtract. This evil comes from navigators having each employed, in the formation of their charts, the meridian adopted by their nation, and they have often adopted a peculiar one for themselves. On the other hand, some, to mark their longitudes, have taken their departure from the west; others from the east, counting to 360 degrees. The rest, and those the greater number among the moderns, have divided their longitudes

into east and west; but the difference between the observatories of Europe being the same with the meridiens of their antipodes, it follows, that, by this division between east and west, a longitude would be, as in our hemisphere, east to one, while it would be west to the other. Thence many errors have arisen, which would be avoided in reckoning uniformly the longitudes to 360 degrees, and agreeing to take a departure from the west. The only objection against this way of reckoning is, that it does not give constantly, by the progression of degrees, an idea of the distance; that is to say, that as far as 180 degrees, the meridian of the antipodes, we are fully sensible that the degrees mark the distance, but going on from this point, every one does not immediately conceive, that at 200 degrees of longitude he is less distant from the meridian whence the reckoning began, than at 180; whereas, in saying 160 degrees of east longitude, instead of 200 degrees of longitude, he immediately perceives where he is.

It must be confessed, that the objection against reckoning to 360 degrees is a very weak one, considering at the same time the merit of a mode of proceeding so simple, and so little liable to mistake; a merit not to be concealed by those few persons who will not give themselves time to learn or judge of the very little distance between their own meridian and that which is $359^{\circ} 59'$ distant

distant from it. The advantage which results from the manner of counting the longitude up to 360 degrees is nevertheless a trifle, compared with that of the adoption of a common meridian, which should serve as a basis to the geography of all nations. It is easy to conceive, that the self-love of every one will, without end, struggle to gain for its own the preference. Every consideration laid aside, the meridian that would appear the most convenient to take, inasmuch as it would cut very little earth, and would leave the meridians of the maritime powers of Europe on the east, would be that of the remarkable peak, which nature seems to have placed in the middle of the seas, to serve as a beacon to navigators; I mean the Peak of Teneriffe. A pyramid, constructed at the expence of the associated powers, should be raised to a point through which the meridional line ought to pass, and a commission of astronomers, chosen from among the members of the proposed union, should determine, by a series of operations, the exact difference between this common meridian, and that of the great observatories of the two hemispheres.

These operations, to which the amplitude of our means might ensure the greatest accuracy, would remove every uncertainty of calculation concerning the quantity to be added or subtracted, in the comparisons of meridian with meridian;

they would do away the differences produced in the results of their comparisons obtained at various periods, and which might be taken for errors, if it were forgotten, that the astronomers, after fresh observations made with more care and better instruments, have changed the product of distance between the meridians of the observatories of Paris and of Greenwich. This difference, which was reckoned $2^{\circ} 19'$, has been acknowledged to be $2^{\circ} 20'$; if it were a question, indeed, of extreme precision, it would be necessary to carry it to $2^{\circ} 20' 15''$, or $9' 21'$ of time, on account of the oblate figure of the earth, in supposing it at $\frac{1}{35}$, agreeably to the observations of the astronomer Lalande, whose merit every one knows, and whose calculations unite perspicuity with precision in a high degree. The idea of a common meridian, which I have prefixed to another work, occurred to me by the reflections, which the examination and methodising of this suggested to me; it may possibly not be well received, but I may be allowed to express my wish for its adoption, until the inconveniences, if any there be, are demonstrated.

This new meridian leaves at least our immense materials of geography in their full value; if this were not the case, it should be rejected, as I reject for the present, though with considerable regret, that of the new division of the circle, because it is accompanied with the serious evil of almost wholly destroying

stroying them: it may be necessary to explain this, which is by no means foreign to my subject. More partial than any one to decimal calculation, treated of with so much accuracy in the writings of the ingenious and learned Borda, as well as in those of other members of the temporary commission of weights and measures, I cannot however dissemble the inconveniences of the division of the circle into 400 degrees. They are such as can only be gotten over in the course of many centuries after the era in which it is universally adopted, during which it will be necessary to retain both divisions, to facilitate the labour of comparing our new charts with those of other nations and powers, and with the old materials of geography.

If the portion of time known by the name of a day require the decimal division, the sun, in his annual revolution, cannot be included in the plan; since then there is a limit in nature where decimal calculation stops, and it cannot divide the period of a solar revolution, why should it be adapted to the division of a circle?

It will be said, that this division of the circle into 400 degrees conforms perfectly with that of the day into 10 hours, the hour into 100 minutes, and the minute into 100 seconds, making a degree of the circle correspond with two minutes and a half of time; it may further be observed, with reason, that the basis of all measures, denominated
mètre,

mètre, being multiples of the ten-millionth part of the quarter of a meridian, thence there results a natural decimal division, since the degree is found to have a hundred thousand *mètres*, or twenty leagues, of five thousand *mètres* each: but these advantages, and that of offering in general an uniform scale in the degree and its subdivisions, cannot do away the inconveniences that would result from the proposed change.

The great design of bringing about an uniformity of weights and measures has given birth to the sublime idea of discovering a natural standard. This standard is precisely such, in fact, as we should find among an enlightened though newly-discovered people, if they had made the same progress in the arts and sciences, and if they had, like us, conceived the project of establishing an uniformity of weights and measures, and taking their general standard from nature.

What occasion could be more favourable for discussing the advantages and inconveniences in the adoption of the uniformity of weights and measures, and of the decimal division, than that of a congress composed of representatives of the most renowned and learned societies in the world? If the various governments agreed to admit this uniformity in cases where it should be deemed useful, its simultaneous and universal admission would double the benefit; and this would be the surest way of overcoming the difficulties arising
from

from its application to the division of the circle, and of time.

What nation better than France could henceforward by her influence, as extended as powerful, realize the plan of this congress? As great in her enterprizes as in her conceptions, in her operations as in her views, she had determined, as I have said, to order a voyage of discovery; the plan drawn up was adopted by the government; the preliminary instructions will prove, that it was as vast as skilfully conceived in its extent, and in its details. An able chief was necessary for commanding the expedition; La Pérouse was chosen. His toils and his constant success in the navy had inured him to every species of danger, and pointed him out as more proper than any one else, to follow the difficult and dangerous course of a long navigation upon unknown seas, and in the midst of countries inhabited by barbarous people. On this subject a few particulars are offered to the reader, concerning the life of this illustrious but unfortunate officer.

Jean-François Galaup de La Pérouse, *chef d'escadre*, was born at Albi, in 1741. Entering at a very early age into the marine school, his enthusiasm was first excited by the example of those celebrated navigators, who had done honour to their country, and he took from that time the resolution to walk in their steps; but, being
only

only able to advance in this difficult road by slow degrees, he prepared himself, by previously studying their works, hereafter to equal them. He united, at a very early period, experience with theory; he had been eighteen years at sea when the command of the last expedition was intrusted to him.

He entered as midshipman, the 19th of November, 1756, and served five years at sea, during that war, the first four on board *le Célèbre*, *la Pomone*, *le Zéphyr*, *le Cerf*, and the fifth on board *le Formidable*, commanded by Saint-André du Verger. This ship made one in the squadron, under the orders of Marshal de Conflans, when it was met off Belle Isle by the English squadron. *Le Magnifique*, *le Héros*, *le Formidable*, composing the rear-division, were attacked and surrounded by eight or ten English ships. The fight began, and soon became general; it was so terrible, that eight men of war, English or French, were sunk during the action, or ran upon the French coasts, where they were obliged to be burnt. *Le Formidable*, more roughly handled than the rest, was the only one taken, after a vigorous resistance. La Pérouse conducted himself with great bravery in this action, in which he was severely wounded.

Restored again to his country, he served in the same capacity, three years longer, on board *le Robuste*, where he distinguished himself on many occasions;

occasions; and his growing merit began to draw upon him the eyes of his superior officers.

The first of October, 1764, he was promoted to the rank of *enseigne de vaisseau*. A man of a less active disposition would have availed himself of the indulgence of the peace, but his ardour for the profession allowed him no repose. To judge of his unwearied activity, it is sufficient to sketch a slight picture of his naval life, from this epoch to 1777. He served

In 1765, on board the flute l'Adour;
 1766, on board the flute le Gave;
 1767, as commander of the flute l'Adour;
 1768, as commander of la Dorothee;
 1769, as commander of le Bugalet;
 1771, on board la Belle-Poule;
 1772, *Ibid.*
 1773, }
 1774, } commanding the flute la Seine & les
 1775, } Deux-Amis, off the coast of Malabar;
 1776, } lieutenant from the 4th of April, 1777.
 1777, }

In the year 1778 the war broke out again between France and England; hostilities commenced, the 17th of June, by an engagement with la Belle-Poule.

In 1779, La Pérouse commanded L'Amazone, one of the ships in the squadron of D'Estaing. Desirous of covering the descent of the troops, at the

the Island of Grenada, he anchored within pistol-shot of an English battery. During the battle between this squadron and that of admiral Byron, he was fixed upon to carry the orders of the commander in chief along the line. After this he took, on the coast of New England, the Ariel frigate, and contributed to the capture of the Experiment.

Being made a captain the 4th of April, 1780, he commanded the frigate L'Astrée, when, being on a cruize with L'Hermione, commanded by captain La Touche, he fought an obstinate battle, on the 21st of July, with six English ships of war, six leagues from the North Cape of the Isle Royale. Five of these ships, the Allegiance, of twenty-four guns, the Vernon, of the same force, the Charlestown, of twenty-eight, the Jack, of fourteen, and the Vulture, of twenty, formed a line to receive him; the sixth, the Thompson, of eighteen, remained out of gun shot. The two frigates bore down together upon the enemy, under a crowd of sail; it was seven o'clock, in the evening, when they fired the first shot. They ranged along to leeward of the English line, in order to cut off their retreat. The Thompson remained all the time to windward. The two frigates manœuvred with so much skill, that they threw the little English squadron into disorder; in about half an hour the Charlestown frigate,

commodore, and the Jack, were forced to surrender, and the three other vessels would have experienced the same fate, if the night had not concealed them from the pursuit of the frigates.

The following year the French government formed the project of taking and destroying the establishments of the English in Hudson's Bay. La Pérouse appeared a proper officer to accomplish this troublesome mission, in a dangerous sea; he received his orders to quit Cape François the 31st of May, 1782. He commanded the Sceptre, of 64 guns, and was followed by the two frigates L'Astrée and L'Engageante, of 36 guns each, commanded by captains de Langle and La Jaille; the land forces on board these ships consisted of two hundred and fifty infantry, forty artillery men, four field pieces, two mortars, and three hundred bombs.

The 17th of July, he made Resolution Island; but no sooner had he penetrated twenty-five leagues into Hudson's Straits than he found his ships entangled with ice, from which he received considerable damage.

The 30th, after having struggled incessantly against obstacles of every kind, he made Cape Walsingham, situate in the most westerly part of the Straits. In order to arrive speedily at Prince of Wales's Fort, which he had proposed first to attack, he had not a moment to lose, the
rigour

rigour of the season obliging all vessels to quit this sea at the beginning of September; but no sooner had they entered Hudson's Bay, than they met with thick fogs: and on the 3d of August, at the first clearing up of the weather, he found himself surrounded with ice as far as he could see, which obliged him to lie to. Nevertheless he overcame these obstacles, and on the 8th, in the evening, having discovered the flag on Prince of Wales's Fort, the French ships ran by their lead within a league and a half of it, and anchored in eighteen fathom water, muddy ground. An officer, sent to reconnoitre the approaches to the fort, brought word, that the ships might bring up, with their guns to bear on it, at a very little distance. La Pérouse, making no doubt, that the Sceptre alone could easily reduce the enemy should they resist, prepared for effecting a descent during the night. Although counteracted by the tide and the darkness, the boats unopposed approached within three quarters of a league of the fort. La Pérouse, seeing no disposition for defence, although the fort appeared to him capable of a vigorous one, sent a summons to the enemy; the gates were opened; the governor and garrison surrendered at discretion.

This part of his orders being executed, he sailed the 11th of August for Fort-York; he experienced

rienced still greater difficulties to get there, than any he had yet met with in this expedition; he ran, in six or seven fathom water, along a coast scattered over with rocks. After having run the greatest risks, the *Sceptre* and the two frigates discovered the entrance of Nelson's River, and anchored, the 20th of August, about five leagues from land.

La Pérouse had taken three decked boats at Prince of Wales's Fort; he sent them with the *Sceptre's* yawl to gain information of Hayes's River, near which Fort York is situated.

The 21st of August, the troops embarked in the boats; and *La Pérouse*, having nothing to fear from the enemy by sea, thought proper to superintend their debarkation.

Hayes's Island, on which stood Fort York, is situate at the mouth of a great river, which it divides into two branches; that which passes before the fort, is called Hayes's River, and the other Nelson's River. The French commander knew, that all the means of defence were erected upon the first; there was besides one of the Hudson's Bay Company's vessels, carrying twenty-five nine pounders, anchored at the mouth. He resolved to push up by Nelson's River, although his troops had on this side to march about four leagues; but he obtained the advantage of rendering the batteries, which were placed upon Hayes's River, useless.

They arrived the 21st, in the evening, at the mouth of Nelson's River, with two hundred and fifty men, with the mortars and guns, and provision for eight days, in order not to be compelled to have recourse to the ships, with which it was difficult to communicate. La Pérouse gave orders for the boats to anchor in three fathom, at the entrance of the river, and he advanced in his boat, with De Langle, the second in the expedition, Rostaing, the commander of the troops, and Monneron, the captain of engineers, in order to sound the river, and inspect its banks, where it was feared the enemy might have raised some works of defence.

They discovered, that the bank was not of easy access; the smallest boats could only get within two hundred yards of it, and that the intervening ground was a soft mud. He then thought it proper to wait for day, and remain at anchor: but the ebb running out much faster than they had expected, the boats were discovered to be aground at three o'clock in the morning.

Exasperated rather than discouraged by this accident the troops debarked, and, after having walked near a mile up to the mid-leg in mud, they arrived in a meadow, where they drew up in order of battle; thence they marched towards a wood, where they expected to find a dry path
which

which might lead them towards the Fort. None was found, and the whole day was employed in seeking for that which did not exist.

La Pérouse ordered Monneron, the captain of engineers to trace out one, by the compass, through the middle of the wood. This difficult labour being executed, served only to make it evident, that there were two leagues of marshy ground to cross, in doing which the troops would often sink up to the knees. A hard gale of wind coming on, in the night, obliged the anxious Pérouse to rejoin his ships. He reached the sea side with all haste; but the storm continuing, he could not get aboard. The next morning he took advantage of a lull, and found means to get on board an hour before a second gale. An officer, who set off at the same time, was wrecked, but, together with the crew, had the good fortune to get on shore; yet he was unable to return on board in less than three days, naked and almost dead with hunger. The *Engageante* and the *Astrée* lost two anchors each in the second gale.

However, the troops arrived before the fort the 24th in the morning, after a very fatiguing march, and it surrendered at the first summons. La Pérouse caused the fort to be demolished, and gave orders to the troops to re-embark without delay.

This last order was frustrated by another strong gale of wind, which exposed the *Engageante* to imminent danger; her third anchor broke, as well as the tiller, and her long-boat was lost. The *Sceptre* lost also her long-boat, yawl, and anchor.

At length the fine weather returned, and the troops re-embarked. *La Pérouse* having the governors of Prince of Wales and York Forts on board, set sail, in order to quit a coast abandoned to ice and tempests, where his military success, though unopposed by the slightest resistance, yet nevertheless had been preceded by so many difficulties, fatigues, and dangers.

If *La Pérouse*, as a military man, were obliged, in conformity with rigorous orders, to destroy the possessions of his enemies, he did not forget, at the same time, the respect that was due to misfortune. Having known, that at his approach the English had fled into the woods, and that his departure, on account of the destruction of their settlements, would expose them to die with hunger, or fall defenceless into the hands of the savages, he had the humanity to leave them provision and arms.

Can there be, on this subject, an eulogium more flattering, than the following sincere declaration of an English seaman, in his account of a voyage to Botany Bay?—"We ought to call to mind with gratitude, in England especially, this
" humane

" humane and generous man, for his conduct,
 " when ordered to destroy our establishment in
 " Hudson's Bay, in the course of the last war."

After a testimony so just and true, and whilst
 England has deserved so well of the friends of
 science and the arts, by her eagerness to publish
 the accounts of her voyages of discovery, shall we
 be compelled to reproach another English officer
 for a breach of his engagements with La Pérouse.

Governor Hearne had made a journey by land,
 in 1772, towards the north, commencing it from
 Fort Churchill in Hudson's Bay, a journey of
 which the particulars are looked for with impa-
 tience; the manuscript journal of it was found
 by La Pérouse among the papers of this gover-
 nor, who insisted upon their being left in his pos-
 session as private property. This journey having
 been nevertheless undertaken by order of the Hud-
 son's Bay Company, with the view of acquiring
 knowledge in the northern part of America, the
 journal might well have been deemed to belong
 to this Company, devolving in consequence to the
 victor; nevertheless, La Pérouse gave way to the
 intreaties of governor Hearne, and allowed him
 to retain the manuscript, but on the express con-
 dition, that he should have it published as soon as
 he returned to England. This condition appears
 not to have been performed even to this moment*.

* It was published in 1795, though apparently not in con-
 sequence of this promise. T.

Let us hope, that this remark, rendered public, will produce the intended effect, or urge the governor to make it known, whether the Hudson's Bay Company, who dread that others should interfere in their commerce and affairs, have prevented its publication*.

At the time of the establishment of the peace with England, in 1783, this expedition ended. The indefatigable La Pérouse enjoyed not a long repose, a more important service awaited him; alas! it was destined to be the last. He was appointed to command the expedition projected in 1785, preparations for which were forwarding at Brest.

I shall not conform to a practice that is very common, in pointing out, beforehand, the track of our navigator, the coasts and the islands that he has explored or visited in the main ocean, the discoveries which he has made in the Asiatic seas, and the important benefits he has rendered to geography: I make this sacrifice to the reader, whose curiosity would rather be excited than anticipated, and who would prefer, without doubt, following the course of the navigator himself.

So far I have considered in La Pérouse only the warrior, and the navigator: but he deserves equally to be known for his personal qualities; for he was not less calculated to conciliate the

* The above anecdote was unknown to me, when I wrote the note which will be seen in vol. II, page 161.

men of every country, or to make himself respected by them, than to foresee, and to conquer the obstacles, which it is allotted to human wisdom to surmount.

Uniting in himself the vivacity peculiar to the inhabitants of warm climates, with an agreeable wit, and an equal temper, his mildness and his amiable gaiety made his company always sought after with eagerness: on the other hand, matured by long experience, he joined to uncommon prudence a firmness of character, which is the characteristic of a strong mind, and which, increased by the hardships of a seaman's life, rendered him qualified to attempt, and to conduct the greatest enterprizes with success.

After the combination of these various qualities, the reader, witnessing his patience in circumstances requiring great labour, the severe resolutions that his foresight dictated, the caution he was obliged to exercise towards his people, will be little astonished at the benevolent and moderate, as well as circumspect conduct of La Pérouse towards them; of the confidence, sometimes even of the deference he paid to his officers, and of his paternal care towards his ships companies; nothing that could interest them, either by relieving their hardships or contributing to their happiness, escaped his watchfulness, and solicitude. Not willing to make of a mercantile

speculation, a scientific enterprize, and, resigning the whole profits of trade to the sailors alone, he reserved to himself the satisfaction of having been useful to his country, and to the sciences. Perfectly succeeding in his views, with regard to the preservation of their health, no navigator has ever made so long a voyage, under such incessant changes of climate, with crews so healthy; since, at their arrival at New Holland, after thirty months sailing, and a run of more than sixteen thousand leagues, they were as well as at leaving Brest.

Master of himself, and never suffering first impressions to carry him away, he was enabled to practice, especially in this voyage, the precepts of a philosophical humanity. If I were more disposed to make his eulogy, necessarily detached and incomplete, than to leave the reader the pleasure of appreciating him by facts, accompanied with all their circumstances, and to estimate him by the general tendency of his writings, I could cite a crowd of passages from his journal, the turn and character of which I have faithfully preserved, which show the man: I could especially point out his attachment to that article of his instructions, engraven on his heart, which ordered him to avoid shedding a single drop of blood; having followed it constantly in so long a voyage, with a success becoming his principles,
and

and when, attacked by a barbarous horde of savages, he had lost his second in command, a naturalist, and ten men of the two ships companies, repressing the powerful means of vengeance he had in his hands, and so many warrantable motives for using them, I would shew him, restraining the fury of the crews, and fearing to strike one single innocent victim, among so many thousands of criminals.

As equitable and modest as he was enlightened, we shall see with what respect he spoke of the immortal Cook, and how desirous he was to render justice to those great men, who had run the same career.

Equally just towards all, La Pérouse, in his journal, and in his correspondence, dispenses with equity the praises, which were due to his associates:—he names also the strangers, who, in different parts of the world, have favourably received them, and procured them assistance. If government, of whose disposition we cannot entertain a doubt, would fulfil the intentions of La Pérouse, it would confer upon these latter, a mark of public gratitude.

Justly prized by the English seamen, who had an opportunity of becoming acquainted with him, they have evinced an unequivocal esteem for him, in their writings. All those who were in habits of intimacy with him, have given him praises, which,

which, though just, would be too long to recount.

But to speak of his virtues, and of his talents, is to recollect his misfortunes, and to awaken our regret : the idea of the former is henceforward inseparably connected with the remembrance of the latter, and they raise for ever a monument of grief and gratitude, in the heart of every friend to the sciences and to humanity. If I have experienced any pleasure at the conclusion of the troublesome labour which this work required, and after the care and attention it has cost me till its publication ; it is, undoubtedly, at this moment, when I am allowed to be the instrument of the French Republic, in paying to his memory a tribute of national gratitude.

La Pérouse, according to his last letters from Botany Bay, was to return to the *Ile de France*, in 1788*. The two following years being expired, even the important events, which occupied and fixed the attention of all France, were unable entirely to detach it from an interest in the fate which appeared to threaten our navigators. The first accents of fear and grief on their accounts were heard at the bar of the national assembly,

* See in Vol. III the extracts from two of La Pérouse's letters, dated Botany Bay, the 7th of February, 1788.

by means of the members of the society of natural history.

"During two years," said they, "France has
"in vain expected the return of M. De La Pé-
"rouse; and those who interest themselves in
"his person, and in his discoveries, have no
"knowledge of his fate. Alas! their appre-
"hensions are perhaps more frightful than his
"actual sufferings; and probably he has only
"escaped death, to be delivered up to the con-
"tinued torments, of a hope, always renewed,
"and always disappointed; perhaps he has been
"cast away upon some one of those islands of
"the South Sea, whence he stretches out his arms
"towards his country, and fruitlessly expects a
"deliverer.

"It is not for objects frivolous in their nature,
"for his own advantage, that M. De La Pérouse
"has braved dangers of every kind: the gene-
"rous nation, which was to gather the fruit of
"his toils, owes him also its interest and its suc-
"cour.

"Already have we learned the loss of several
"of his companions, swallowed up by the waves,
"or massacred by the savages: cherish the little
"hope, which remains of gathering together
"those of our brothers, who may have escaped
"the fury of the billows, or the rage of can-
"nibals; let them return to our shores, though
"they

“ they should die with joy at seeing their country
“ free.”

The request of the society of natural history, received with the most lively interest, was followed up by a law, ordering two frigates to be immediately fitted out in search of La Pérouse.

The reasons upon which the decree was founded, even the wording of the report, evinced what a tender and affecting concern our navigators had inspired; and the eagerness with which, in the desire of recovering them, the first glimpse of hope was entertained, without thinking of the great sacrifices the pursuit required.

“ For a long while our ardent wishes have
“ called for M. De La Pérouse, and the compa-
“ nions of his glorious, but too probably unfor-
“ tunate voyage.

“ The society of naturalists of this capital is
“ come to tear the veil, which you were afraid to
“ raise; the grief of which it has given the ex-
“ ample is become universal, and you appeared
“ to receive with transport the idea which it sug-
“ gested of sending out vessels in search of M. De
“ La Pérouse.

“ You have ordered your committees of ma-
“ rine, of agriculture, and of commerce, to pre-
“ sent to you their thoughts upon this interesting
“ subject: the sentiment which appeared to ac-
“ tuate you has also dictated our opinion.

“ We

" We have hardly the consolation to doubt
" that M. De La Pérouse has experienced some
" great misfortune.

" We cannot reasonably hope, that his vessels
" at this moment plough the surface of the seas :
" either this navigator and his companions are no
" more ; or else, thrown upon some frightful
" shore, lost in the immensity of unknown seas,
" and confined in the extremities of the world,
" they perhaps struggle against the climate,
" against wild beasts, against men, against nature,
" and call their country to their aid, which can
" only form a guess concerning their misery.
" Possibly they have been thrown upon some un-
" explored unknown coast, upon some barren
" rock ; there, if they have met with a hos-
" pitable people, they yet live, and implore your
" assistance ; or if they have only met with a
" desert, perhaps wild fruits, shell fish, sustain
" their existence : fixed to the shore, their
" looks lose themselves in distance upon the sea,
" in endeavouring to discover the happy sails,
" which might restore them to France, to their
" relations, to their friends.

" Compelled to catch at an idea, which is
" perhaps only a consoling error, you are de-
" sired without doubt as we are to prefer this
" conjecture to the hopeless idea of their total
" loss : it is that which the society of naturalists

" or

" We

“ of Paris came to present to you; it is that
“ which M. De La Borde had offered to every feel-
“ ing heart, in a memoir to the academy of
“ sciences.

“ But if this idea touch you, if it strike
“ you, you cannot henceforward give yourselves
“ up to an impotent regret; humanity demands
“ of us to fly to the assistance of our brethren.

“ Alas! where look for them? Whom shall we
“ ask concerning their condition? Can we ex-
“ plore all the coasts of a sea almost unknown?
“ Can we touch at all the islands of those im-
“ mense archipelagoes, which offer so many dan-
“ gers to navigators? Can all the gulfs be ex-
“ mined, all the bays penetrated? And even if
“ we should be fortunate enough to touch at the
“ island which conceals them, may we not even
“ then, perhaps, fail to discover them?

“ Without doubt the difficulties are great, suc-
“ cess is scarcely to be expected: but the motive
“ for the enterprize is powerful; it is possible, that
“ our brothers may yet be alive, we may yet re-
“ store them to their country; and hence we are
“ not permitted to reject the temptation of a re-
“ search, which cannot but do us honour. It is
“ our duty to show this concern for men, who
“ have thus devoted themselves; we owe it to
“ the sciences, which await the fruits of their re-
“ search; and that which ought to increase this

" concern is, that M. De La Pérouse was not one
" of those adventurers, who catch at great enter-
" prizes, whether for the purpose of advancing
" their characters or fortune; he was not even
" ambitious of commanding the expedition en-
" trusted to him, he wished to have been able to
" decline it; and even when he accepted the
" command, his friends knew he did but resign
" himself. Happily we know the course, that it
" is necessary to follow in so painful a research;
" happily we can put into the hands of those,
" who are to be charged with this affecting mis-
" sion, the clue of the perilous labyrinth.

" The proposal of a search, which humanity
" commands, cannot be brought to this tribunal
" to be combated by parsimony, or discussed by
" cool reason, when it ought to be judged by
" sentiment.

" This expedition will be the most glorious re-
" compense to M. De La Pérouse, or to his me-
" mory, with which you can honour his labours,
" his sacrifices, or his misfortunes.

" By acts like these a nation is illustrated; and
" the sentiments of humanity which prompt them,
" will characterize our age. It is no longer for
" the purpose of invasion and ravage, that the
" European penetrates into the most distant lati-
" tudes, but to carry thither enjoyments and be-
" nefits; no longer to steal away the corrupting
" metals,

“metals, but to obtain those useful vegetables,
“which may render the life of man more com-
“fortable and easy. In short, there will be seen,
“and savage nations will not behold it unmoved,
“there will be seen, at the extremities of the
“world, pious navigators, inquiring with concern
“about the fate of their brothers, of men and of
“deserts, of caves, of rocks, and even of barren
“sands: there will be seen on the most treacherous
“seas, in the windings of the most dangerous
“archipelagoes around all those islands peopled by
“cannibals, men wandering in search of other
“men to throw themselves into their arms, to suc-
“cour and to save them.”

The ships sent out in search of La Pérouse had scarcely sailed, when a rumour was spread, that a Dutch captain, passing by the Admiralty Islands to the west of New Ireland, perceived a canoe, containing natives of that place, who appeared to him to be clothed in the uniform of the French navy.

General d'Entrecasteaux, who commanded this new expedition, having touched at the Cape of Good Hope, had been informed of this report; notwithstanding the flenderness of its authenticity and little likelihood, he did not hesitate a single instant; he changed the plan of his route to hasten to the spot. His ardour not having been repaid with success, he recommenced his search

in the order prescribed by his instructions, and completely fulfilled them all, without being able to obtain the smallest information, or acquire any thing like probability concerning the fate of our unfortunate navigator.

There were various conjectures in France as to the cause of his loss: some persons, unacquainted with the track he had to follow from Botany Bay, which is traced in his last letter, have advanced, that his ships had been caught in the ice, and that *La Pérouse*, and all his companions, had perished by the most horrible of deaths; others have given out, that during his passage to the *Ile de France*, towards the end of 1788, he had been the victim of that violent hurricane, which proved so fatal to the *Venus* frigate, which was never heard of afterwards, and which totally dismasted the *Resolution* frigate.

Although we cannot deny the assertion of these last persons, we ought not on the other hand to admit it without proof. If this be not true, *La Pérouse* has most likely perished by stress of weather on one of then unnumbered reefs of rocks, with which the archipelagoes, that he had still to explore, have been actually found by General d'Entrecasteaux to abound. The manner in which the two frigates have always sailed, being constantly within hail of each other, would have involved both of them in the same fate; they would have experi-

enced the misfortune which they so narrowly escaped on the 6th of Nov. 1786, and would have foundered before they could reach any land. The only hope which could remain would be, that they had been wrecked upon the coasts of some uninhabited island; in this case, perhaps, a few individuals may still exist upon one of the innumerable islands of these archipelagoes. At a distance from every usual course they might have been overlooked in the search, and might only be able to see their country again by the accidental arrival of some vessel, all means of building one being probably wanting.

We nevertheless cannot but observe, that the savages make very long runs in simple canoes; and we may judge, by the inspection of the chart, that if the ship had been lost on a desert island, or one inhabited by savages, who had spared the remainder of the crews, they would have been able, in the course of nine years, to arrive, by degrees, in a country, whence some tidings of them might have been received; for it is probable, that they would have attempted every thing, to get out of a state of anxiety and solitude worse than death. If then we be not bereft of all hope, at least that which remains is very feeble. A navigator has asserted, that he had seen signs of the wreck of *La Pérouse*; the reader may judge of the confidence that he merits, by his deposition, which I shall quote

literally, without any other observation than comparing the author with himself, and placing his story by the side of Bougainville's relation.

Extract from the minutes of the justice of peace of the town and commune of Morlaix.

"George Bowen, captain of the ship Albemarle, bound from Bombay to London, and carried into Morlaix, being examined whether he had had any information concerning La Pérouse, who sailed from France on a voyage round the world, answered, that in December, 1791, he himself perceived, on his return from Port Jackson to Bombay, upon the coast of New Georgia*, in the eastern ocean, pieces of the wreck of a ship floating upon the water†, and which he judged to be of French construction; that he had not been on shore, but that the natives of the country came on board him; that he could not understand their language, but by their signs he had comprehended, that a

* Reconnoitred by Shortland, lieutenant in the English navy, in 1788; but partly discovered by Bougainville, captain in the French navy, in 1768, and still more by Surville, captain of a ship in the India Company's service, who called it the land of the Arfacides. (*Fr. Ed.*)

† La Pérouse could only have been lost in 1788. I leave those who know the effects of waves of the sea upon a vessel wrecked, to judge whether these pieces of wreck could be still floating upon the water at the end of December, 1791.—(*Fr. Ed.*)

ship had touched on their coasts; that the natives knew the use of many implements of iron, concerning which they were very curious; and that he had exchanged with them several articles of iron and glass ware, for bows; that with respect to the character of these Indians, they appeared to him pacific*, and better informed than the inhabitants of Otaheite, since they had a perfect knowledge of works in iron, and their canoes were built in a superior manner; that when the natives were on board his ship, he had not yet discovered the wreck in question, and that sailing along the coast, he perceived it by the help of a great fire lighted upon the land near the middle of the night† of the 30th December, 1791; that without this fire he had probably run upon the rocks of Cape Deception. The deponent declares, that in all this quarter of the coast of New Georgia he remarked a great number of huts or cabins; that these Indians were of a robust stature, and of a mild disposition,

* These Indians, characterized as pacific, attacked the boats Bougainville had sent on shore to fetch water, as soon as they had entered Choiseul Bay. (*Fr. Ed.*)

† It is undoubtedly surprizing, that the pieces of wreck seen by George Bowen, and affirmed to be part of La Pérouse's ship, and of French construction, circumstances which suppose them to have been of considerable size, and examined at no great distance, should only be perceived at midnight by the flame of a fire kindled on land. (*Fr. Ed.*)

whence

whence he presumes, that if M. De La Pérouse or any of his crew be on shore there, they may still be alive* ; and that he knows, that all the ships which have navigated these coasts are those of Bougainville—the Alexander—the Friendship, of London—M. De La Pérouse—and the deponent ; that in consequence he presumed the pieces of wreck to be the remains of M. De La Pérouse's ship† ; since the Alexander foundered in the Straits of Macasser, and the Friendship arrived safe in an English port. On being asked whether he had seen any clothes upon the natives which denoted them to have had communication with Europeans, he answered, that the people were naked ; that the climate is very hot ; and that by their signs he discovered, that they had previously seen ships ; that he perceived in the possession of these Indians fishing nets, the threads of which were flax, and the meshes of European manufacture‡ ; that out

* Bougainville, obliged to repel by force the attack of these Indians, possessed himself of two of their canoes, in which he found, among other things, the jaw of a man half broiled, an evident proof that they were cannibals. (*Fr. Ed.*)

† The English captain ceases to give it as a certainty, that the pieces of wreck he perceived were the remains of La Pérouse's ship ; it now becomes simply a presumption.—(*Fr. Ed.*)

‡ Bougainville found in the canoes, which fell into his hands, nets with very fine meshes, skilfully woven ; it is probable, that the perfection of their construction led captain Bowen into a mistake. (*Fr. Ed.*)

of curiosity he took a piece of it, from which it would be easy to discover that the materials and the workmanship were European."

Such is at this time the only information we are in possession of concerning the fate of our navigator. The public indications still in existence of the track he followed, and of the places he examined, are the medals struck on occasion of his voyage, and left or distributed by La Pérouse during the course of it. He took out with him about a hundred of silver and bronze, and six hundred others of different kinds. As we know the route which he had still to perform, these medals may one day point out to us nearly in what spot his misfortune interrupted it.

The medal relative to the voyage, becoming an historical monument, and being liable to be found again one day by other navigators, I cannot refrain from making it known, though I have not thought proper to have it engraved; on one side is the effigy of the king with the common inscription; the reverse bears the following inscription encircled by two branches of olive tied together by a ribbon:—

Les Frégates du roi de France, la Bouffole et l'Astrolabe, commandées par M. M. De La Pérouse et De Langle, parties du Port de Brest en Juin 1785.

The King of France's frigates the Bouffole and Astrolabe, commanded by De La Pérouse and De Langle, sailed from the port of Brest, in June, 1785.

So many precautions taken for the success of a great expedition, the expence it occasions, and the troubles and the evils it draws after it, will occasion many prejudiced and systematic persons to doubt whether these pains and cares be compensated by the reciprocal utility, which mankind find in voyages of discovery.— Although I might question the utility of introducing domestic animals, and a few farinaceous plants among savages, compared with the evils which result to them, from the false or superficial notions that our principles suggest to them, and from the sudden communication of our manners and our customs; I say, that after having given them detached notions, which they know not how either to extend or to apply, vegetables and animals which they neither preserve nor perpetuate, then to leave them to themselves, is to give them the knowledge and desire of gratifications which they cannot procure, and thereby to promote their unhappiness: but to raise them by degrees with the view to civilize them, to make orderly colonies before we make a polished people of them, and not to give them new wants and new ways of acting, without the means of providing for the one, and beneficially serving themselves by the other; is to prepare and to secure to their posterity the happy fruits of the expansion of the human faculties.

If we, as well as they, may suffer some inconveniences from our communications with them,

when our respective situations are so different, yet the great advantages that the arts and sciences receive from voyages of discovery, cannot reasonably be contested. It is the nature of civilized man to enlarge the sphere of his knowledge and enjoyments, by the advance of his understanding and the enlargement of his desires. The navigator, as he proceeds, discovers new and useful productions; determines the situation of different places, thus giving security to his own route and that of others; learns to judge his fellow-creatures by a greater number of comparisons; and every progressive movement he makes is a step towards the knowledge of man and of nature. It is grand, it is beautiful, to incur expences, and to run risks, for the wants of society at large, and the growth of true riches.

If some philosophers have disapproved of voyages in general, because expeditions undertaken with ambitious and interested views have been followed by acts of barbarity, it is because these have been confounded with voyages of discovery, which have had for their object to carry benefits to our fellow creatures, and to enlarge the field of science.

These benefits, we shall perhaps be told, are the price of their blood; because they cannot be kept within bounds, without employing against them a force, which, becoming destructive to the navigators themselves, occasions a double crime in the eyes of philosophy and of nature.

Let

Let us consult the navigators known by their moderation ; their accounts prove to us, that, by employing the means which prudence dictates, it is easy to restrain the savages by the mere display of force : quickly attached by benefits to navigators whom they respect, they are susceptible of gratitude, and consequently of every other sentiment.

We must, however, do justice to the motive which has misled these philosophers : this respectable motive is humanity ; we ought therefore to be of one opinion henceforward, from the conduct of our navigators, seeing their extreme care and caution for the life of savages, who destroy each other upon the slightest pretexts ; the ferocity of these last softened by civilization ; and the immense quantity of blood spared by the abolition of human sacrifices, so revolting, and so generally spread throughout savage nations.

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VOYAGE
ROUND THE WORLD,
IN THE YEARS

1785, 1786, 1787, AND 1788.

*Decree of the National Assembly, of the 9th of
February, 1791.*

THE National Assembly, after having heard its united committees of agriculture, of commerce, and of marine, decrees,

That the King be entreated to give orders to all ambassadors, residents, consuls, and national agents, at the courts of foreign powers, that they may engage those different sovereigns, in the name of humanity, and of the arts and sciences, to charge all navigators and agents whatsoever, their subjects, in whatever place they may be, but especially in the southerly part of the South Sea, to make inquiry after the two French frigates *La Bouffole* and *L'Astrolabe*, commanded by M. De La Pérouse, as well as after their crews, and to obtain every information, which may ascertain their existence or their shipwreck; so that in case M. De La Pérouse and his companions should be found, no matter in what place, there be given to them
every

every assistance, and all means procured for them, that they may be enabled to return to their country with whatever may belong to them; the National Assembly engaging to indemnify, and even to recompense, according to the importance of the service, whomsoever shall lend them succour, obtain news concerning them, or only restore to France whatsoever papers and other effects may have belonged to these navigators in their expedition.

It is further decreed, that the King be entreated to direct, that one or more vessels be equipped, and several learned and experienced persons, naturalists, and draughtsmen embarked therein, to the commanders of which may be given in charge the double mission, to search after M. De La Pérouse, according to the documents, instructions, and orders, that shall be given to them, and also at the same time to make inquiries relative to the sciences and to commerce, taking every measure independantly of the pursuit after M. De La Pérouse, and even after having met with him, or obtained news concerning him, to render this expedition useful and advantageous to navigation, to geography, to commerce, and to the arts and sciences.

Compared with the original, by us-President and Secretaries of the National Assembly.

(Signed)

DUPORT, President.

LIORE,
BOUSSION, } Secretaries.

Paris, 24th February, 1791.

Decree

Decree of the National Assembly, of the 22d of April, 1791.

The National Assembly decrees, that the accounts and charts sent by M. De La Pérouse, of that part of his voyage as far as Botany Bay, shall be printed and engraved at the expence of the nation, and that this expence shall be defrayed out of the fund of two millions, ordered by the 14th article of the decree of the 3d of August, 1790.

Decrees, that as soon as the edition shall be completed, and that as many copies are taken from them as the King would like to dispose of, the surplus shall be sent to Mad. De La Pérouse, with a copy of the Decree, as a testimony of their satisfaction for the exertions of M. De La Pérouse for the public welfare, and for the increase of human knowledge and useful discovery.

Decrees, that M. De La Pérouse shall remain on the list of naval commissioned officers until the return of the ships in search of him; and that his pay shall continue to be received by his wife, according to the disposition that he had made before his departure.

Compared with the original, by us President and Secretaries of the National Assembly.

(Signed)

REUBELL, President.

GOUPIL-PREFELN,
MOUGINS-ROQUEFORT,
ROGER,

} Secretaries.

Paris, 25th April, 1791.

NOTE

Decree

NOTE OF THE KING,

To serve as a particular instruction to the Sieur De La Pérouse, captain of the navy, commanding the frigates La Bouffole and L'Astrolabe.

(26 JUNE, 1785.)

HIS Majesty having caused to be equipped, at the port of Brest, the frigates La Bouffole, commanded by the Sieur De La Pérouse, and L'Astrolabe, by the Sieur D Langle, captains of the navy, to be employed in a voyage of discovery, is about to make known to the Sieur De La Pérouse, to whom he has given the command in chief of these two vessels, the service he will have to perform, in the important expedition, which he has confided to his care.

The different objects which his Majesty has had in view in commanding this voyage, have rendered it necessary, that the present instruction should be divided into several parts, in order that it may explain more clearly to the Sieur De La Pérouse the particular intentions of his Majesty, upon every one of the objects that will engage his attention.

The first part will contain the route or plan of his voyage, according to the order of the discoveries it is in contemplation to make or to carry to perfection;

perfection; and there will be joined to it a collection of geographical and historical notes, which may guide him in the various inquiries, to which he will devote himself.

The second part will treat of the objects relating to policy and to commerce.

The third will explain the operations relative to astronomy, to geography, to navigation, to natural philosophy, and to the different branches of natural history, and will regulate the labours of the astronomers, natural philosophers, naturalists, scientific persons, and artists employed in the expedition.

The fourth part will prescribe to the *Sieur De La Pérouse*, the conduct it will be necessary for him to pursue, with the savage people and the natives of the different countries which he will have opportunities of discovering or visiting.

The fifth and last will point out to him the precautions he will be required to take, to preserve the health of his crews.

FIRST PART.

Plan of the Voyage.

The *Sieur De La Pérouse* will sail from Brest Road, as soon as every preparation shall have been made.

He

He will touch successively at Funchal, in the island of Madeira; and at Praya, in that of St. Jago. He will provide himself with some casks of wine in the first port, and complete his water and wood in the last, where he may also procure himself some refreshments. He will observe, however, with regard to Praya, that he ought to make the shortest possible stay there, because the climate is very unhealthy at the season when he will reach it.

He will cross the line in the 29th or 30th degree of west longitude from the meridian of Paris; and if the wind should permit him, he will try to reconnoitre Pennedo de san Pedro (*see note 2*) and to ascertain its position.

He will examine the island of Trinidad, (*notes 10 & 11*) will anchor there, and may wood and water, as well as fulfil there a particular object of his instructions.

In leaving this island he will run into the latitude of *Ile Grande de la Roche* (*note 19*); he will follow the parallels of 44° and 45° to 50 degrees of longitude, in 35 degrees of west longitude, and he will give up the search of this island if he have not met with it when he shall have reached that meridian. If he should prefer making it from the westward, he will nevertheless keep between the above-mentioned meridians.

He will run afterwards into the latitude of *Terre de la Roche*, called by Cook the *Island*
of

of Georgia, in the 54th degree of south latitude. He will make the north west end of it, and will particularly examine the southern coast, which has not yet been visited.

Thence he will look out for *Sandwich Land*, (note 21) in about 57 degrees south latitude: he will observe, that captain Cook could only inspect some points on the west side of this land, and that the extent of it towards the east and to the south is unknown. He will examine particularly the east coast, in order afterwards to run down the south side, and double that end of it, if the ice do not oppose an invincible obstacle to his pursuits.

When he is assured of the extent of this land to the east and the south, he will shape his course to make *Staten Land*, double Cape Horn, and anchor in Christmas Sound, on the south-west coast of *Terra del Fuego*, where he will provide himself with wood and water; but if he finds it too difficult to beat to the westward, by reason of the winds which usually prevail in this part, and the currents which sometimes run strong to the eastward, he will stand for the coast of Brazil in the latitude he can best make it; run along this land with variable winds or land breezes, and may even touch at Falkland's Islands, which offer resources of different kinds. He will afterwards pass *Strait le Maire*, or double the east end of *Staten Land* to

reach Christmas Sound, which, in any case, must be the first rendezvous of his Majesty's ships in case of separation.

In quitting Christmas Sound he will shape his course so as to pass the meridian of 85 deg. west, in the latitude of 57 degrees south, and he will keep in this parallel to 95 degrees of longitude, to look for Drake's Port and Island (*note 23*).

He will afterwards cross the meridian of 105 deg. in the parallel of 38 deg., in which he will keep to 115 deg. of longitude, endeavouring to find an island said to be discovered by the Spaniards, in 1714 (*note 25*), in 38 deg. of latitude, between the 108th and 110th meridian.

After this search, he will get into the latitude of $27^{\circ} 5'$ upon the meridian of 108 degrees west, to look in this parallel for *Easter Island*, situate in $112^{\circ} 8'$ of longitude. He will anchor there to fulfil the particular object, which will be prescribed in the second part of the present instructions.

From this island he will return to the latitude of 32 deg. on the meridian of 120 deg. west, and he will keep in that parallel to 135 deg. of longitude, to find land seen by the Spaniards in 1773 (*note 27*).

At this point of 135 deg. of longitude, and 32 of latitude, the two frigates are to part company.—The first will stand on to the intermediate parallel between 16 and 17 deg., and will keep in it from
the

the 135th to the 150th meridian west from Paris, whence she will steer for the island of Otaheite. The interval from the 16th to the 17th degree of latitude, on a space of 25 degrees in longitude, not having been visited by any modern navigators, being scattered over with low islands, it is possible that the ship which follows the above-mentioned track will meet with new islands, which may be inhabited, as are most of the low islands in these seas.

At the same time the second frigate, going from the same point of 32 degrees of latitude, and 135 of longitude, will get into $25^{\circ} 12'$ south latitude, and try to keep in this parallel, beginning in the 131st or 132d degree of longitude. This frigate will look out for Pitcairn Island, discovered, in 1767, by Carteret, and situate in $25^{\circ} 12'$ of south latitude. The longitude of this island is yet uncertain, because this navigator had no means of ascertaining it by observation. It is much to be desired it might be determined with precision, because the position of this island, if well known, might serve gradually to rectify that of other islands or lands discovered subsequently by Carteret.

In quitting Pitcairn Island, the second vessel will stand to the westward, and afterwards to the north-west, to look successively for the islands of the Incarnation, of St. John the Baptist, of St. Elmo, of

the Quatro Coronadas, of St. Michael, and of the Conversion of St. Paul, discovered by Quiros, in 1606, (note 28), which it is supposed may be situate to the south-east of Otaheite, and which have not been seen, or even sought for, by the navigators of this century. The second ship will thus, by a north-west course, arrive at 150 degrees west longitude, and at 19 degrees of latitude, whence she will proceed to Otaheite.

It is to be presumed, that the two frigates may be there towards the latter end of April. That island will be the second rendezvous of the king's ships, in case of separation. They will, in the first place, anchor in the bay of Oheitepcha, situate at the north-east part of the island called *Tiarabou*, or *Otaheite-ete*, which is found to windward of the bay of Matavai, situate at the north point, or Point Venus; and they will afterwards put into this latter place, in order to procure at those two different anchorages, with greater facility, such refreshments as they may stand in need of.

The Sieur De La Pérouse will leave Otaheite after a month's stay. He may, in his way, visit Huaheine, Ulietea, Otaha, Bolabola, and others of the Society Islands, to procure the remaining supplies of provision, to provide these islands with European articles, serviceable to their inhabitants, and to sow seeds, plant vegetables, trees, &c.
which

which may in time present new resources to European navigators crossing this ocean.

In quitting the Society Islands, he will steer a north-west course to get into the latitude of the Island of St. Bernard of Quiros (*note 28*), about the 11th degree. He will not proceed in his search for this island further than from 158 to 162 degrees of longitude; and from the latitude of 11 degrees he will stand to the north-west, till he gets into the 5th degree of south latitude, and between the 166th and 167th degrees of longitude; he will then shape his course to the south-west, to cross, in this direction, the part of the sea situate to the north of the archipelago of the Friendly Isles, where it is probable he will meet, according to the reports of the natives of those islands, with a great many others, in all likelihood inhabited, and which have not yet been visited by Europeans.

It would be desirable if he could again find the island of the *Bella Nación* of Quiros, which he should look for between the parallels of 11 and 11½ degrees from the 169th degree of longitude, up to the 171st, and successively the Navigators Islands of Bougainville, likewise he will go to the Friendly Islands to procure refreshments,

Upon leaving the Friendly Islands, he will get into the latitude of the *Isle of Pines*, situate at the south-east point of New Caledonia (*note 29*); and after having made it, he will coast it westerly,

to ascertain whether this land be all one island, or formed of many islands.

If, after having run down the south-west coast of New Caledonia, he can make Queen Charlotte's Islands, he will try to reconnoitre the island of Santa Cruz of Mendana (*note 30*), and determine its extent to the south.

But if the wind should not allow of this course, he will make for the Deliverance Islands, at the east point of the *Terre des Arfacides*, discovered, in 1769, by Surville (*note 32*); he will run along the south coast, which neither this navigator, nor any other, has examined, and he will satisfy himself whether, as is probable, these lands do not form a group of islands, which he will try to particularize. It is to be presumed, that they are peopled on the coasts to the south, as we know those to the north are; perhaps he may procure there some refreshments.

He will endeavour, in like manner, to examine an island to the north-west of the *Terre des Arfacides*, the eastern coast of which was seen by Bougainville in 1768; but he will pursue this research no farther than to be able without difficulty afterwards, to make Cape Deliverance on the south-east point of *Louisiade* (*note 33*); and, before reaching this cape, he will examine, if he can, the east coast of this land.

From

From Cape Deliverance he will steer a course for Endeavour Straits (*note 34*), and will, in these straits, try to ascertain whether the land of Louisiade be contiguous to that of New Guinea; and he will examine all this part of the coast, from Cape Deliverance to the island of St. Bartholomew, east north-east of Cape Walth, of which we have at present but a very imperfect knowledge.

It is much to be wished that he could inspect the *Gulf of Carpentaria* (*note 35*); but he will have to observe, that the north-west monsoon, to the south of the line, begins about the 15th of November, and that the limits of this monsoon are not so fixed, that they may not sometimes extend themselves beyond the 10th degree of south latitude. It is therefore important, that he observe the greatest diligence in this part of his survey, and that he pay attention to combine the length of his course, and rate of his sailing, so as to have repassed the longitude of the south-west point of the Island of *Timor*, before the 20th of November.

If, contrary to all appearance, it should have been impossible for him to have procured refreshments, wood, and water, in the places he had touched at after his departure from the Friendly Isles, which may be supposed to have been about the 15th of July, he will stop at Prince's Island, at the entrance of the Straits of Sunda, near the western point of the island of Java.

On leaving Prince's Island, or if he have not been forced to put in there, in quitting the channel to the north of New Holland (*note 35*), he will direct his course so as to inspect the south coast of this land, and he will begin this examination as high up towards the equator as the winds will permit him. He will survey the west coast, and inspect more particularly the southern coast, of which the greatest part has never been explored, and he will approach to the south of *Van-Diemen's Land* (*note 36*), at Adventure Bay, or at Frederick Henry Bay; thence he will make for Cook's Straits, and anchor at Queen Charlotte's Sound, situate in the strait between the two islands which form New Zealand. This port will be the third rendezvous for the frigates in case of separation. He will repair his ships there, and provide himself with refreshments, wood, and water.

It may be presumed he can sail from this port at the beginning of March, 1787.

In going out of Cook's Straits, or New Zealand Straits, he will stand for, and remain between, the parallels of 41 & 42 degrees, as far as the 130th degree of west longitude. When he shall have reached this longitude, he will stand to the north, in order to get to windward, and into the latitude of the Marquesas islands of Mendoza (*note 38*); to supply the wants of his ships, he will put into the port of *Magre de Dios of Mendana*, on the western

western coast of the isle *Santa Christina* (Cook's Resolution's Bay); this port will be the fourth rendezvous in case of separation.

It may be presumed that this passage will take up two months, and that he will be ready to sail again about the 15th of May.

If, in sailing from the Marquesas islands of Mendoza, the winds should be sufficiently favourable for him, to make, at least, a northerly course, he might reconnoitre some of the islands to the east of the group of Sandwich Isles (*note 40*): he will afterwards repair to these last, where he may take a supply of provision, but he will not stay there.

He will sail, as soon as he can, to make the north-west coast of America; and to this effect he will stand to the northward, as far as 30 degrees, to get out of the trade winds, and that he may make the above coast in $36^{\circ} 20'$ at *Punta de Pinos*, to the south of Port Monterey, of which the mountains (or *sierra*) of Santa Lucia, are the marks.

It is probable, that he may arrive at this coast about the 10th or 15th of July (*note 41*).

He will particularly endeavour to reconnoitre those parts which have not been examined by captain Cook, and of which the relations of Russian and Spanish navigators have given no idea. He will observe, with the greatest care, whether, in

in those parts not yet known, some river may not be found, some confined gulf, which may, by means of the interior lakes, open a communication with some part of Hudson's Bay.

He will push his enquiries to *Behring's Bay*, and to Mount St. Elias, and will inspect the ports *Bucarelli* and *Los Remedios*, discovered, in 1775, by the Spaniards.

Prince William's Sound, and Cook's River, having been sufficiently explored, he will not make a point of visiting them; but after making Mount St. Elias, he will steer a course for the Shumagin Islands, near the peninsula of Alaska.

He will afterwards examine the archipelago of the *Aleutian Islands* (note 42), and successively the two groups of islands to the west of the former, concerning the true position and the number of which we are uninformed, and which altogether constitute, with the coasts of Asia and America, the great northern basin or gulf.

When this examination is completed, he will put into the port of *Avatscha* (note 43), or St. Peter and St. Paul, at the south-eastern extremity of the peninsula of *Kamtchatka*.

He will try to be there about the 15th or 20th of September; and this port will be the fifth rendezvous in case of separation.

He will diligently provide for the wants of his ships there, and will gain the necessary information

tion so as to be sure of finding provision there when he comes again in 1788.

He will so arrange his operations as to be ready to sail in the first ten days of October.

He will coast along and examine all the Kurile Islands (*note 44*), the north-east coast, the east and the south of Japan; and, according as the season advances, and he may find the winds more or less favourable, the seas more or less difficult, he will extend his researches to the islands on the east and the south of Japan, and to the islands of Lekeyo, as far as Formosa.

When he shall have completed this examination, he will put into Macao and Canton, or Manilla, according to circumstances.

This port will be the sixth rendezvous in case of separation.

It is presumed, that he ought to be there towards the end of the year 1787.

He will get his ships repaired and victualled, and will wait in port the return of the south-west monsoon, which commonly sets in about the beginning of March. He may, notwithstanding, delay his departure till the first of April, if his crews have need of longer rest, and if, after the information he shall have gained, he think the navigation northward would be too hazardous before this period.

What-

Whatever may be the length of his stay, he will shape his course in quitting this port, to pass the straits, which separate the island of Formosa from the coast of China, or between this island and those which lie to the east.

He will examine with care the west coast of Corea, and inspect the gulf of Hoan-hay, taking care not to stand in so far as to prevent him from weathering the south coast of Corea, with a south-west, or southerly wind.

He will afterwards examine the eastern coast of this peninsula, that of Tartary, where the pearl fishery is carried on, and that of Japan, on the other side. All these coasts are absolutely unknown to Europeans.

He will pass the straits of *Tessby*, and explore the land known by the name of *Jesso* (*note 45*), and that which the Dutch have denominated. *Staten Land*, and the Russians, *Nadezda Island*, about which there are at present only confused ideas, from some ancient accounts which the Dutch East India Company have suffered to transpire, but the accuracy of which has not been ascertained.

He will finish his observations upon such of the Kurile Islands (*note 44*), as he may not have been able to visit in the preceding month of November, in coming from Avatscha to Macao.

He

He will pass between some of these islands as near as he can to the southerly point of Kamtschatka; and will anchor in the port of Avatscha, the seventh rendezvous in case of separation.

After refitting and victualling, he will go to sea again, at the beginning of August.

He will come into the latitude of 37° $\frac{1}{2}$ north, on the meridian of 180° deg.

He will steer to the westward, to look out for land, or an island which is said to have been discovered by the Spaniards, in 1610, (*note 48*); he will follow up this search to the 165^{th} of east longitude. He will stand afterwards south-west, and south-south-west, to examine the dispersed islands situate in this direction, to the north-east of the Ladrões, or Marianne Islands.

He may put in at the island of Tinian, but he will so contrive to combine the time of his stay, and his further course, with the north-east monsoon, which only begins in October to the north of the line, so that on quitting the isle of Tinian he may run down and examine the New Carolinas (*note 49*), situate south-west of the island of Guaham, one of the Mariannes, and to the east of Mindanao, one of the Philippines. He will proceed in this examination as far as the islands of St. Andrew.

He

He

He will afterwards come to an anchor at the island of Mindanao, in the port situate on the south side of the island, behind that of Sirangam.

After a stay of a fortnight, taken up in supplying himself with refreshments, he will set sail for the Molucca Islands, and may anchor at Ternate, to procure what further provision may be wanting.

As the north-west monsoon, which then blows to the south of the line, would not permit him to pass the straits of *Sunda*, he will avail himself of the variation of the wind near the equator, to steer between Ceram, and Bourro, or between Bourro, and Bouton (*note 50*); and he will endeavour to stand out from between some of the islands to the east or west of Timor (*note 51*).

It is probable, that, having then run beyond the parallel of 10 deg. south, he will find himself to be out of the north-west monsoon, and that he may easily, with the winds from the east, and south-east, stretch towards the west, and make the *Isle of France*, which will be the eighth rendezvous of the ships, in case of separation.

He will stay at the *Isle of France* only so long as is absolutely necessary to put himself in a condition to return to Europe, and will take advantage of the last months of the summer, for the

the navigation which will remain to be performed in the seas south of the Cape of Good Hope.

On quitting the Isle of France, he will stand into the parallel between 54 and 55 degrees south, to look for Cape Circumcision (*note 54*), discovered by Lozier Bouvet, in 1739.

He will cross this latitude at 15 deg. of east longitude, and follow the parallel between 54 and 55 degrees, up to the meridian of Paris, or 0 of longitude.

When he arrives at that point, he is to quit the search after this land.

If at this period he judge the ships to be not sufficiently provided with provision, to make their return to Europe, he may go into the Cape of Good Hope, to put them into a condition to continue their voyage; and this port may be the ninth rendezvous for the vessels, in case of separation.

Whatever he may have done in this respect, he will, in coming back to Europe, endeavour to reconnoitre the islands of *Gough* (*note 18*), *d'Alvarez* (*note 17*), *Tristan d'Acunha* (*note 16*), *Saxemburgh* (*note 14*), and *Dos Picos* (*note 10*), and if he meet with them, he will ascertain their positions, which remain to this time uncertain.

He will return to the port of Brest, where it is probable he may arrive in July, or August, 1789.

Although



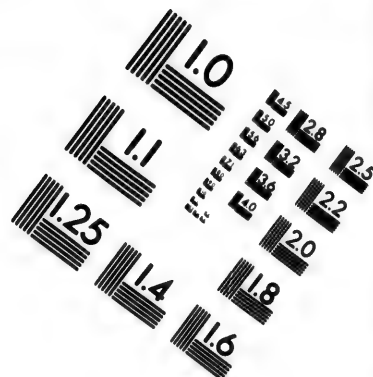
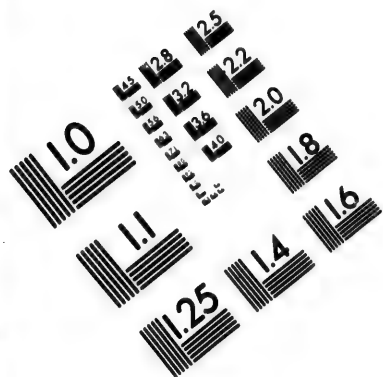
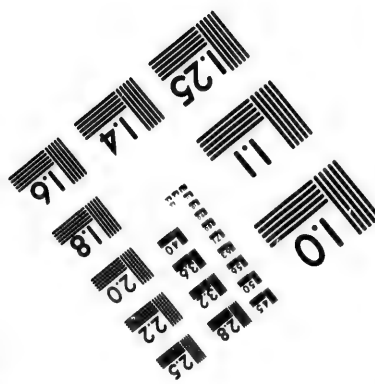
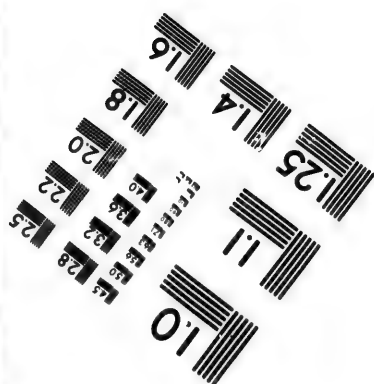
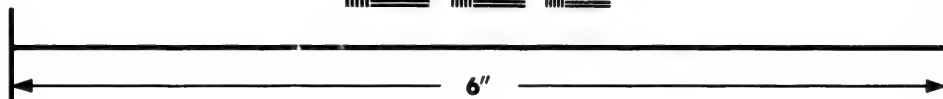
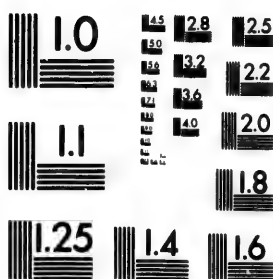


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Although the course of the *Sieur De La Pérouse* is thus traced by the present instruction, and his going into the various ports, and his stay there are pointed out, his Majesty does not mean to have it understood, that he should invariably subject himself to this plan. All the calculations here presented ought to be governed by the circumstances of his navigation, the condition of his crews, of his provision, and his ships, as well as by the events of his voyage, and accidents which it is not possible to foresee. All these causes may more or less produce a change in the plan of his operations; and the object of the present instructions is only to make known to the *Sieur De La Pérouse* the discoveries which remain to be made, or to be perfected, in the different parts of the globe, and the course which appeared convenient to be followed: that he might proceed with order, in his various researches, in combining his different routes, and the periods of his going into harbour, with the seasons, with the predominant or periodical winds, in every latitude he has to go through. His Majesty, relying therefore on the experience and judgment of the *Sieur De La Pérouse*, authorizes him to make the changes which may appear to him necessary, in the cases which have not been foreseen,

seen; provided he keep as near as possible to the plan which is traced out to him; and conform himself especially to that which will be prescribed in the other parts of these instructions.

SECOND PART.

Objects relating to Policy and Commerce.

HIS Majesty has pointed out in the first part of these instructions, to the *Sieur De La Pérouse* the course which he will have to follow, in the inquiries and discoveries which he has to make, in the greatest part of the terrestrial globe; he is about to make known to him, in this part, the objects relating to policy and commerce, which ought particularly to occupy his attention, at the different places at which he may touch; so that the expedition which his Majesty has ordered, in contributing to perfect geography, and extend navigation, may equally fulfil, under other considerations, the views that his Majesty proposed to himself, for the interest of the crown, and the utility of his subjects.

1st. The duration of the stay, that the *Sieur De La Pérouse* should make at *Madeira*, and at *St. Jago*, will be too short to enable him to acquire any exact knowledge of these Portuguese colonies; but he will neglect no means of obtaining

information, respecting the forces, that the crown of Portugal keeps there, respecting the commerce carried on there, by the English, and other nations, and the great objects concerning which it may be interesting to be informed.

2ndly. He will satisfy himself whether the English have entirely evacuated the Island of Trinidad; whether the Portuguese be established there; and in what consists the establishment the latter may have formed there since the evacuation.

3dly. If he should happen to fall in with the *Ile Grande of la Roche*, he will examine whether it contain any commodious and safe port, where wood and water are to be procured; what facility it can offer to form an establishment, in case the whale-fishery might draw French adventurers into the Southern Atlantic Ocean; whether there be any part which might be advantageously fortified, and kept by a small number of troops, a post, in short, convenient for an establishment, so far off from succour and the protection of the mother country.

4thly. He will examine the Island of Georgia, with the same views; but it is probable, that this island, being situate under a higher latitude, holds out less facility than might be expected from the position of *Ile Grande*; and that the ice, which obstructs the sea during a part of the year in the vicinage of Georgia, would throw great obstacles

stacles in the way of ordinary navigation; and would intimidate the fishermen from making this island a point of rendezvous and retreat.

5thly. The islands of the great equatorial ocean will offer but few observations to be made relative to policy and commerce. Their distance seems likely to prohibit the nations of Europe from forming establishments there: and Spain only could have any interest in occupying islands, which, being seated at nearly an equal distance from her possessions in America and Asia, might become places of shelter and refreshment, for her trading ships which traverse the great ocean.

However that may be, the *Sieur De La Pérouse* will principally attend to the climate and the productions of every kind, in the different islands of this ocean, where he may land, to learn the manners and customs of the natives, their religion, the form of their government, their manner of making war, their weapons, their vessels, the distinctive character of each tribe, whatever they may have in common with other savage nations, as well as with civilized people, and principally for what each in particular is remarkable.

Of those islands where the Europeans have already been he will endeavour to learn, whether the natives of the country have distinguished the different nations which have visited them, and he will try to get out of them what opi-

nion they may have of each of them in particular. He will inquire what use they have made of the different merchandize, of the metals, the tools, the stuffs, and the other things, which the Europeans have carried them. He will inform himself whether the cattle and other animals, which captain Cook left upon some of the islands, have multiplied, what grain, what herbs from Europe have best succeeded, what method the islanders have practised for their cultivation, and to what use they have turned their produce. Every where in short, he will examine what has been related by such navigators as have published accounts of those islands, and he will principally endeavour to remark what may have escaped the researches of his predecessors.

During his stay at Easter Island, he will satisfy himself, whether the population decrease there, as there is room to presume, after the observations and the opinion of captain Cook.

On passing to the island of Huaheine, he will strive to make acquaintance with OMAI, that islander whom the English navigator established there on his third voyage; he will learn from him what treatment he met with from his countrymen, after the departure of the English, and what use he has himself made of the lights and knowledge which he must necessarily have acquired during his stay in Europe, for the service, benefit, and melioration of his country.

6thly. If

6thly. If during the inspection and examination he will make of the islands of the great equatorial ocean, and the coasts of the continents, he should meet with any ship at sea, belonging to some other power, he will conduct himself towards the commander of such ship, with all the politeness established and agreed upon, between polished and friendly nations; and if he meet with such in some port belonging to a people considered as savage, he will concert measures with the captain of the strange vessel, for effectually preventing all manner of dispute, all altercation between the crews of the two nations, which might be ashore together, and to lend each other mutual assistance, in case either might be attacked by the islanders or savages.

7thly. In the visit he will make to New Caledonia, Queen Charlotte's Islands, and the Land of the Arfacians, and that of Louisiade, he will carefully examine the productions of these countries, which, being situate under the torrid zone, and in the same latitudes as Peru, may open a new field of speculation in commerce; and, without giving way to the reports, undoubtedly exaggerated, which the ancient Spanish navigators have made of the fertility, and the riches of some of the islands, which they discovered in this part of the world, he will only observe, that the reconciliation of various accounts, founded

upon geographical combinations, and upon the knowledge and information which modern voyages have procured, give room to think, that the land discovered, in the one part, in 1768, by Bougainville, and in the other, in 1769, by Surville, may be the islands discovered in 1567, by Mendana, and known since by the name of *Solomon's Islands*; which name was given them in after-times, by the idea whether true or false that was entertained of their riches.

He will examine with similar attention the northern and western coasts of New Holland, and, particularly, that part of those coasts which, lying under the torrid zone, may participate in the productions common to places in the same latitudes.

8thly. He will not have the same inquiries to make at the islands of New Zealand, which the accounts of English navigators have very fully made known. But during his stay in Queen Charlotte's Sound, he will endeavour to discover, whether England have formed, or projected any establishments upon these islands; and in case he should learn that any has been formed, he will endeavour to visit them and obtain information of the state of it, and of the strength and object of such establishment.

9thly. If, in the researches he will make in the north-west coast of America, he meet with, in some

some points thereof, forts or factories, belonging to his Catholic Majesty, he will sedulously avoid every thing which may give umbrage to the governors of those establishments; and he will make use of the ties of blood and friendship, which unite the two sovereigns so closely, in order to procure, by these means, all the assistance and refreshments of which he may stand in need, and with which the country may be in a condition to furnish him.

It appears, that Spain has had the intention of extending its title of possession as far as the Port *de los Remedios*, about the 57th degree and a quarter of latitude; but there is nothing which gives assurance, that, in ordering it to be inspected in the year 1775, she has formed any establishment there, any more than at the Port of *Bucarelli*, situate about two degrees less northward. As far as it is possible to judge by the descriptions of this country, which have made their way into France, the actual possession of Spain does not extend beyond *St. Diego*, and *Monterey*, where she has raised little forts, and guarded them by detachments drawn from California, or New Mexico.

The Sieur De La Pérouse will endeavour to obtain the knowledge of the condition, the strength, the object of these establishments, and to apprise himself, whether these be the only

ones that Spain has formed upon these coasts. He will examine, in like manner, at what latitude might be begun the procuring of furs and skins; what quantity the American Indians could furnish; what merchandize, what objects would be the most eligible for the traffic of peltry; what conveniences might be found for forming an establishment upon this coast, in case of this new commerce presenting sufficient advantage to the French merchants, to induce them to engage themselves in it, in the hope of exporting these furs to China, where we are assured they find a ready sale.

He will, in like manner, endeavour to gain a knowledge of what kind of skins may be purchased, and if those of the otter, which bear the highest value in Asia, where they are much sought after, be the most common in America. He will take care to bring to France specimens of all the different furs, which he may have been able to procure: and as he will have occasion in the course of his voyage to put into China, and perhaps to touch at Japan, what species of skins in these two empires have the most easy, most certain, and most lucrative sale, and what benefit France might promise itself from this branch of commerce. In short, he will try, during his stay on the coasts of America, to discover whether the Hudson's Bay establishments, the forts

or

or factories of the interior, or any province of the United States, have opened, by the medium of the wandering savages, any communication of commerce or barter, with the people of the west coast.

10thly. It is probable, that in visiting the *Aleutian* islands, and the other groupes situate to the south of the large northern Archipelago, he will meet with some Russian establishments or factories. He will endeavour to learn their constitution, their strength, their object; what is the navigation of the Russians in these seas, what ships, what men they employ there; how far they extend their commerce, as also whether there be any of these islands which acknowledge the dominion of Russia, or all be independent; in fine, whether the Russians have not by small degrees stretched themselves to the very continent of America.

He will profit by his stay in the port of Avatscha, to increase the knowledge to be acquired in these particulars, and to procure for himself at the same time, if it be possible, whatever information he may need respecting the Kurile Isles, the land of Jesso, and the empire of Japan.

11thly. He will make his examinations of the Kurile Isles, and of the land of Jesso, with prudence and circumspection, as much in consideration of that which concerns his navigation in a sea

sea which is not known to Europeans, and which passes for tempestuous, as in the communication which he may have with the inhabitants of these islands and lands, whose character and manners must necessarily have some conformity with those of the Japanese, who may have subjugated part of them, and hold communication with the others.

He will see by the geographical and historical notes joined to the present instruction, that Russia does not extend her dominion further than to those of the Kurile Isles, the nearest to Kamtschatka; and he will examine, whether, in the number of southerly and independent isles, there be not one remaining, upon which, in the supposition of a commerce in skins and furs to be opened with France, it would be possible to form an establishment, or factory, which might be rendered secure from any insult on the part of the islanders.

12thly. With regard to Japan, he will endeavour to reconnoitre and inspect the north east, and the east coast, and go on shore in some one of its ports, in order to satisfy himself whether its government in reality oppose any invincible obstacle to every establishment, to every introduction of commerce or barter with Europeans, and whether by the enticement of furs, which are an object of utility and luxury to the Japanese, it would not be possible to prevail on the ports of the east

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or north-east coast, to admit ships, which should bring furs, and receive in exchange teas, silks, and other productions of their soil, and the works of their manufacture; perhaps the prohibitory laws of this empire, which all the accounts of this country speak of as so severe, are not in force on the coasts to the north-east and east, with so much rigour as at Nangasaki and the south coast, places too near the capital to expect any relaxation in them.

13thly. During the time the *Sieur De La Pérouse* is at Macao, he will take the necessary measures to obtain the convenience of wintering at Canton. He will address himself for this purpose to the *Sieur Vieillard*, his Majesty's consul at China, and he will charge him to take such measures with the Chinese government, as will be proper to succeed therein. He will take advantage of his stay in this port, to inform himself exactly and in detail of the present state of the commerce of the European nations at Canton; and he will inquire into this important object, under all the points of view, in which it may be interesting to be informed.

He will gain every information which may be useful to him in his future navigation in the seas to the north of China, upon the coasts of Corea, and of Eastern Tartary, and of all the lands or islands which remain to be inspected in these parts.

parts. He will not neglect, if it be possible, to procure a Chinese and Japanese interpreter, and a Russian interpreter for his second call at Avatscha; he will bargain with them for the time he may keep them in the service of the ship, and on his return, will land them at Mindanao, or at the Moluccas.

14thly. It is necessary he be informed, that the Japanese pirates are sometimes very numerous in the sea comprised between Japan, Corea, and Tartary. Their weakness requires no other precaution on his part, than being on his guard during the night, to prevent a surprise on theirs; but it will not be useless, that he should endeavour to speak to one of them, and engage him by presents and promises of recompence, to pilot his Majesty's ships, in his survey of Jesso, of which it is believed one part is under the dominion of Japan; in the passage through the Straits of Tesso, which the Japanese must necessarily know; and in the exploring of such of the Kurile Isles, as they may be in the habit of frequenting. This same pilot may be equally serviceable in visiting some port on the west coast of Japan, in case circumstances should not have allowed a landing at any point of the east or north-east coast. But whatever use the *Sieur De La Pérouse* may make of the said pilot, he must not give up to his advice and suggestions, but with the most cautious reserve.

reserve. It is proper also, that he should engage, if he can, some fishermen of the Kurile Isles, to serve him as pilots for such of those islands as border on Kamtschatka.

The *Sieur De La Pérouse* will thus, in standing again to the northward, endeavour to complete his knowledge of the islands, which he could not make in coming from *Avatscha* to *Macao*, and to compensate on the west coast of *Japan*, for what he had not been able to effect upon the east and north-east coast.

The reconnoitring of the coasts of *Corea* and of *Chinese Tartary* ought to be made with much prudence and circumspection. The *Sieur De La Pérouse* is not ignorant, that the *Chinese* government is very distrustful: he should in consequence avoid hoisting his colours, or making himself known, nor should he permit any thing to be done, which might excite upon these coasts the inquietude of that government, lest the effects of it should be felt by the *French* ships which trade to *Canton*.

15thly. In exploring the *Caroline* Islands, which are scarcely known but by name to most of the nations of *Europe*, the *Sieur De La Pérouse* will endeavour to learn whether the *Spaniards*, as they have frequently projected, have yet formed any establishment there.

He will obtain the knowledge of the productions of these islands, and of all those which he may

may have been able to discover to the north-east, and to the west-south-west of the Marian, or Ladrone Islands.

16thly. In the stay which he will make at Tinian, one of the Marian Islands, he will obtain information concerning the establishments, the forces, and the commerce of the Spaniards in that archipelago and its environs.

He will make the same inquiries at Mindanao, in order to know, as much as he can, the political, military, and commercial state of this nation in the Philippines.

17thly. During the stay he will make at the Moluccas, he will neglect nothing with respect to the information to be obtained concerning the situation and the commerce of the Dutch in these islands. He will study particularly to learn the advantages which the English derive in their commerce from the liberty this power has obtained, by its last treaty of peace with Holland, of navigating and trafficking in the whole extent of the Asiatic seas, and he will endeavour to learn what use England has made of this liberty, and whether she have already gone so far as to open by this way any new branch of commerce in this part of the world.

18thly. If the *Sieur De La Pérouse* put into the Cape of Good Hope, he will obtain precise information concerning the present situation of that colony,

colony, the forces that Holland or the Dutch East India Company keep there since the peace, and the state of the new and old fortifications which defend the town, and protect the anchorage.

19thly. Generally in all the islands, and in all the ports of the continent, occupied or frequented by the Europeans, where he may land, he will with prudence, as much as the time he stays, and circumstances will permit, make every inquiry which may enable him to communicate in detail the nature and the extent of the commerce of each nation, the forces both by land and by sea that each keeps in them, the connections of interest or friendship which may exist between each and the chiefs or natives of the country where they have their establishments, and generally all that can interest either policy or commerce.

THIRD PART.

Operations relating to Astronomy, to Geography, to Navigation, to Natural Philosophy, and to the different Branches of Natural History.

1st. HIS Majesty having appointed two astronomers to be employed under the orders of the Sieur De La Pérouse, in the expedition which he has confided to him, and his two frigates being provided

provided with all the instruments of astronomy and navigation; of which use can be made either by sea or land, he will take care in the course of the voyage, that one or other of them makes all the astronomical observations which may appear to him of any utility.

The object of the greatest importance to the safety of navigation is, to fix with precision the latitudes and longitudes of the places where he may land, and of those within sight of which he may pass. With this view he will recommend to the astronomer employed on board each frigate, to observe with the greatest exactness the movement of the time-keepers, and take advantage of every favourable circumstance for verifying, on shore, whether they have kept good time during the run, and to confirm by observation the change which may have happened in their daily movement, in order to keep an account of the change, so as to determine, with greater precision, the longitude of the islands, the capes, or other remarkable points, which he may have observed and laid down in the interval of the two verifications.

As often as the state of the sky will permit him, he will order lunar observations to be taken, with the instruments for that purpose, to determine the longitude of the ship, and to compare it with that which the time-keepers indicate

Indicate at the same point of time: he will take care to multiply the observations of each kind, so that the mean result between different operations may procure a more precise determination. Whenever he passes within sight of any island or land, at which he does not propose to go on shore, he will be sure to keep himself as much as possible on its parallel at the time when observations are made of the meridian height of the sun, or of any star, from which to calculate the latitude of the ship; and he will keep under the same meridian while observations are making to determine the longitude. Thus he will avoid all error of position, and reckoning, which may injure the exactness of the determination. He will cause daily observations to be made, when the weather will permit, of the variation and dip of the magnetic needle.

As soon as he arrives in any port, he will make choice of a commodious spot of ground to pitch his tents; and set up his portable observatory, with which he is provided, and he should place a guard over it.

Independently of the observations relative to the determination of latitudes and longitudes, for which there will be employed every kind of method known or practised, and of those for knowing the variation of the compass, he will not fail to observe every celestial phenomenon which

may be perceived; and on all occasions he will obtain for the two astronomers all the assistance which may assure the success of their operations.

His Majesty is persuaded, that the officers and the naval cadets, employed in the two frigates, will zealously endeavour to make, in concert with the astronomers, every observation which may have any useful connection with navigation; and that these last persons, on their part, will be eager to communicate on the earliest occasions the fruits of their studies, and that theoretical knowledge, which may contribute to carry the nautical art to perfection.

The *Sieur De La Pérouse* must cause a double journal to be kept on board each frigate, in which must be entered, day by day, as well by sea as by land, the astronomical observations, those relative to the employment of the time pieces and all others. These observations will be inserted in the rough in the log-book, that is to say, in it will be simply written the quantity of degrees, minutes, &c. given by the instrument at the moment of observation, without any calculation, and in pointing out only the known error of the instrument, of which use will be made, if it have been ascertained by the accustomed verifications.

Each of the astronomers should keep one of these journals, and the other should remain in the hands of each captain.

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The astronomer will besides keep a second journal, wherein he should in like manner insert, day by day, all the observations which he may have made, to which he will join for every operation, all the calculations which necessarily lead to the last result.

At the end of the voyage the *Sieur De La Pérouse* should have the two journals deposited in his hands, which shall have been kept by the astronomers, after they have been certified as true, and signed.

2ndly. When the *Sieur De La Pérouse* shall land at those ports, which it may be interesting to be acquainted with, in a military point of view, he will obtain that knowledge through the chief engineer, who will give him a circumstantial report of the remarks he may have made, and of the plans which it may have been in his power to lay down.

The *Sieur De La Pérouse* is to order exact charts to be drawn of all the coasts and islands he shall have inspected; and if they have been previously known he must verify the exactness of the description and of the charts, which other navigators shall have given of them.

To this effect, whenever he navigates along a coast, or in sight of islands, he must cause them to be surveyed very exactly with a quadrant, or with an azimuth compass; and he should observe, that the surveys, on which the most re-

liance may be had for the construction of charts, are those by which a cape or any remarkable object can be laid down by means of another.

He will employ the officers of the two frigates, and the geographic engineer, to lay down, with care, the plans of coasts, bays, ports, and anchorages, which he shall be within reach of exploring; and to each plan he must add an instruction, containing every thing relative to the appearance and bearings of the land, the marks for sailing in and out of the harbours, the proper births for anchoring, or mooring, and the best place for watering; the soundings, the quality of the bottom, the dangers, rocks, and shoals, the predominant winds, the trade winds, the monsoons, the time they last, and the period of their changing; in short, all the nautical details which it may be useful to make known to navigators.

All the plans of countries, of coasts, and of ports, must be made in duplicates; one of them must be deposited in the hands of each captain; and at the end of the voyage the *Sieur De La Pérouse* should take into his possession all the charts and plans, and the instructions relating to them.

His Majesty leaves it to him to fix the period at which he will order the decked boats to be put together, which are embarked in pieces on board each frigate: he will perhaps do this during

during his stay at Otaheite. These boats may be employed very usefully in following the frigates, whether in visiting the archipelagoes, situate in the great equatorial ocean, or for exploring in detail the parts of a coast, and in sounding the bays, the ports, the passages, and, in short, for facilitating every search or inquiry, which requires a vessel drawing but little water, and capable of carrying a few days provision for its crew.

3dly. The naturalists appointed to make, during their voyage, observations peculiar to their studies, will be employed each of them in those departments of natural history, with which they are best acquainted.

The Sieur De La Pérouse should, in consequence, prescribe to them the researches which they will have to make, and should distribute to them the instruments and apparatus appropriate thereto.

He should be attentive, in the distribution of the business, not to employ any individual on two different subjects, so that the zeal and the intelligence of every one of the learned persons on board, may have their entire effect in promoting the general success of the expedition.

He should communicate to them the memorial of the academy of sciences, in which this society points out the particular observations, to which it would desire the professors of natural philosophy

phy and natural history attend to during the voyage; and he should recommend them to concur, every one in what may concern him, and according to circumstances, in fulfilling the objects pointed out in this memorial.

He must in like manner communicate to the surgeon of each frigate the memorial of the society of medicine, in order that both may make such observations as will fulfil the wishes of this society.

The *Sieur De La Pérouse*, in the course of his voyages, and his stay in port, must cause a journal to be kept on board each ship, of all the observations relative to the wind and weather, the currents, the variations of the atmosphere, and all that concerns meteorology.

During his stay in harbour, he should cause observations to be made on the genius, the character, the manners, the customs, the temperament, the language, the government, and the number of the inhabitants.

He should have the soil and the productions of the different countries examined, and every thing which relates to mineralogy.

He should have the natural curiosities collected, as well terrestrial as marine; he will have them classed in their order, and have a descriptive catalogue for each species, in which ought to be

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mentioned the places where they have been found, the use which the natives of the country make of them, and, if they be plants, of the virtues which they attribute to them.

He should in like manner collect and class the clothes, the arms, the ornaments, the pieces of furniture, the implements, the musical instruments, and all the effects used by the different people he may visit; and each object ought to have a ticket or label on it, with a number corresponding with that of the catalogue.

He will get drawn, by the draughtsmen embarked in the two frigates, all the views of the land, and the remarkable situations, portraits of the natives of the different countries, their manner of dress, their ceremonies, their pastimes, their edifices, their vessels, and all the productions of the earth and of the sea, if the drawings of these different objects should appear to him of any use, in facilitating the comprehension of the descriptions the scientific men have made of them. All the drawings which shall have been made in the voyage, all the cases containing the natural curiosities, as well as their descriptions, and the collection of astronomical observations, should be put into the hands of the *Sieur De La Pérouse*, at the end of the voyage, and no one of the men of science, or artists, will be allowed to reserve for

himself, or for another, any of the specimens of natural history, or other objects, which the *Sieur De La Pérouse* shall have deemed deserving to be comprized in the collection destined for his Majesty.

4thly. Before his return to the port of Brest, at the end of the voyage, or before his arrival at the Cape of Good Hope, in case he should put in there, the *Sieur De La Pérouse* shall cause to be put into his hands all the journals of the voyage which shall have been kept on board the two frigates by the officers and marine cadets, by the astronomers, scientific men, and artists, by the pilots, and by all other persons. He must enjoin them to keep a strict silence relative to the object of the voyage, and the discoveries which may have been made, and he must demand a promise of them to this effect; he must assure them, moreover, that their journals and papers will be restored to them.

FOURTH PART.

Of the Conduct to be observed with the Natives of the Countries, where the two Frigates may make a Landing.

THE accounts of all the voyagers, who have preceded the *Sieur De La Pérouse* in the seas which

which he is about to traverse, have informed him beforehand of the character and manners of part of the different people with whom he may have to communicate, as well in the islands of the great ocean, as upon the coasts of the north-west of America.

His Majesty doubts not but that, improved by the reading of such authors, he will make a point of imitating the good conduct of some of those navigators, and of avoiding the faults of others who have preceded him.

Upon his arrival in any country, he should seek to conciliate the chiefs or principal men, as well by marks of good will as by presents; and he must assure himself of the resources which he may find upon the spot for supplying the wants of his ships.

He should employ all honourable means to form connections with the natives of the country.

He should seek to discover what are the merchandizes or objects of Europe to which they appear to attach the greatest value, and he ought to compose an assortment which will be agreeable to them, and which may invite them to make exchanges.

He will feel the necessity of putting in use all the precautions which prudence may suggest, to maintain his superiority over the multitude, without

out being obliged to employ force; and whatever flattering reception he may meet with from the savages, it is important that he should always shew himself in a state of defence, because it would be to be feared, that his security might engage them to surprise him.

Upon no occasion must he send a boat ashore, unless it be furnished with its swivels, firelocks, swords, pikes, and a sufficient quantity of ammunition; it must also be commanded by an officer, who should be ordered never to lose sight of the boat committed to his care, and always to leave some men in it for its protection.

He must permit no person either among the officers or crew to sleep ashore upon any account but that of service; and those whose functions oblige them so to do, must retire before night into the tents pitched ashore, which serve as observatories or magazines. He must place a guard there, where an officer ought always to sleep, to maintain good order among the sailors and soldiers attached to that duty, and to prevent, by an active and continued watchfulness, any attack or enterprize of the savages.

He will take care to anchor his Majesty's frigates within reach to protect the establishment; and he should give orders to the officer, who may be on guard, concerning the signals which the latter will have to make in case of alarm.

As soon as these dispositions are made, he should employ himself in providing for the subsistence of his crews and the other wants of the ships; and after having made a choice as to quantity of his commodities, implements, and goods of every kind, with which the two frigates are furnished, he should form a magazine ashore, under the protection of a guard; but, as he is informed, that in general the islanders of the great ocean have an irresistible inclination to theft, he must take care not to tempt them by the sight of too great a number of objects collected together in one place, but to carry every day on shore only the effects which may be employed in exchange during the course of that day.

He will regulate the value of these exchanges, and he will never allow any one to surpass the price which shall be fixed on each article of trade, lest by agreeing, in the commencement of their dealings, to too high a price for the articles which he would procure, the natives might refuse to sell more afterwards at a smaller price.

He must establish only one magazine for the two frigates; and to preserve good order there and prevent all abuses, he must specially charge an officer to treat with the savages, and single out the petty officers or other persons who will be required to perform, under his orders, the service of the magazine.

No officer, or other person of the staff, or of the crews, can be allowed, under any pretence whatever, to barter any thing, if the *Sieur De La Pérouse* have not given him express permission, and have not regulated the rate of exchange.

If any one of the people of either crew should conceal any article belonging to the ships, or any part of the merchandize intended for exchange, the *Sieur De La Pérouse* must order him to be punished according to the severity of the laws; and he should punish still more severely those who, being in the service of the magazine, shall have abused his confidence, and have secreted effects to traffic with, fraudulently.

He will recommend to every person among the crews, to live in a good understanding with the natives, to endeavour to conciliate their friendship by a proper way of acting and respect; and he must forbid them, under pain of the most rigorous punishments, ever to employ force for taking from the inhabitants what they may not be willing to part with.

The *Sieur De La Pérouse*, on every occasion, will act with great mildness and humanity towards the different people he may have any intercourse with during his voyage.

He will apply himself zealously and with interest about all the means which may meliorate their condition, in procuring their country vegetables, fruits,

fruits, and trees, useful in Europe; in teaching them how to sow and cultivate them; in acquainting them with the use they ought to make of these presents, the object of which is to multiply upon their soil the productions necessary to a people who draw almost all their food from the earth.

If imperious circumstances, which it is prudent to foresee in so long an expedition, should ever oblige the *Sieur De La Pérouse* to avail himself of the superiority of his weapons over those of a savage people, in order to obtain the necessaries of life, in spite of their opposition, such as subsistence, water, and wood, he ought not to use force but with the greatest moderation, and should punish those of his people with extreme rigour who go beyond these orders. In all other cases, if he cannot obtain the good will of the savages by a kind treatment, he should endeavour to constrain them by fear and threats, and should not have recourse to arms but in the last extremity, only for defence, and in cases where moderation might decidedly risk the safety of the ships, and the lives of French, whose preservation is committed to his care.

His Majesty will look upon it as one of the most successful parts of the expedition, that it may be terminated without costing the life of a single man.

FIFTH PART.

*Precautions to be taken for preserving the Health
of the Crews.*

THE *Sieur De La Pérouse* knowing the intention of his Majesty with regard to the conduct he should observe towards the savage nations, and the wish his Majesty has, that the visit of Frenchmen, far from being a misfortune to these people, may, on the contrary, procure them advantages of which they are deprived, will certainly foresee what particular care he ought to pay to the preservation of the crews employed in the expedition which his Majesty has trusted to his conduct.

The ships under his orders are abundantly provided with every aid which can prevent the diseases of the sea, or arrest their progress, as well as with those which are intended as substitutes for ordinary diet, and to correct its bad effect. He will keep a watchful eye, that those various helps and succours are used properly, and in due measure; and will be extremely vigilant concerning the various resources, which the different ports into which he puts may offer him, for procuring refreshments and wholesome aliments for his crews, in order to repair the effects of a long use of salt meats.

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His Majesty confides in the prudence of the Sieur De La Pérouse as to the form which may appear to him the most convenient to be established on board the two frigates for the stowage of the ship's provision in the hold.

He should take care to inspect and air, while he remains in port, such parts of the ship's stores as evince a tendency to decay, the progress of which may be stopped by this precaution.

He will neglect no opportunity to procure fresh fish for his crews, and to renew his salted provision by the means which have been put within his power, and in making use of the method which has been practised with success by the navigators of later times who have traversed the great ocean.

The Sieur De La Pérouse is not uninformed, that one of the precautions, which contribute the most efficaciously to preserve the health of the seamen, is the continual attention to keep the ships and crews extremely clean.

He will make use to this effect of all the known means, such as ventilators, fumigations, and perfumes, to renew and purify the air of the holds and between decks. He will every day, if it can be done, have the hammocks and the clothes of the crews exposed to the open air; and in order that the sailors and other persons on board may not neglect the cleanliness of their persons, he should divide them into squads, the inspection and

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and care of whose conduct he will distribute among the officers of the two frigates.

Each of the officers ought to render an account every week, to the captain, of the state of the clothing and of the wants of the squad which has been committed to his care; and upon the order of the *Sieur De La Pérouse*, the clothing for supplying such deficiencies, which his Majesty has ordered to be embarked, will be given out to the crews of the two ships, according to the distribution which shall have been regulated by the commanding officer, and in the circumstances where he shall judge this assistance necessary.

The *Sieur De La Pérouse* should establish the most exact discipline among the crews of the two frigates, and he will carefully keep a strict hand to prevent any relaxation in this respect; but this severity, seasonable in every part of service, and absolutely necessary in a voyage of several years, will be tempered by the constant effect of those paternal cares which he will owe to the companions of his fatigues; and his Majesty, knowing the sentiments with which he is animated, is assured, that he will be constantly occupied in obtaining for his crews all the accommodation, and all the indulgence he can grant to them, without injury to the interests of the service and the object of the expedition.

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His Majesty could not give to the *Sieur De La Pérouse* a more distinguished mark of the confidence he has in his zeal, his ability, and his prudence, than in committing to him one of the most extensive enterprizes which has ever been projected. Some of the navigators, who have preceded him in the career of discoveries, have left him great lessons and great examples; but his Majesty is persuaded, that, equally ambitious of glory, equally zealous for the increase of human knowledge, equally persevering as his models, he will one day deserve to be considered one himself for those, who, stimulated by the same courage, are desirous of contending for the same celebrity.

NOTE.

In drawing up a plan of navigation for the voyage of discovery, the conducting of which is confided to *M. De La Pérouse*, the object has been for him to follow, in the different seas, tracks which have not been followed by any of the navigators who have preceded him; this step has appeared to be the most sure of multiplying discoveries, and of considerably advancing in this voyage the great work of the complete description of the terrestrial globe.

There has nevertheless been a necessity for pointing out islands already known, as ports where there is a certainty that *M. De La Pérouse* may procure subsistence by means of barter and exchange, for which the means are furnished him by the

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quantity of merchandize of every kind which composes the assortment, accommodated to the fancy of the islanders, with whom he will have occasion to trade. But in communicating to the French commander the places for refreshment and repose that have already been frequented, attention is had to direct him to arrive there by tracks, which have not hitherto been followed; and in the number of merchandizes, with which he has been furnished, it has not been neglected to put up many of kinds which are not yet known in the islands he may touch at, in order that the natives of the country may know, that the nation which brings them, is a new nation to them, and one by which they have not yet been visited.

Different elements of calculation have been employed to estimate the duration of time in performing the different runs. In the common sailing in open seas, it is supposed that the ships with trade winds might run thirty leagues in 24 hours; twenty-five leagues only have been allowed to the same space of time, for those parts where prudence requires the ships should lie to a part of the night; twenty leagues only where the ships are on discovery: and in this last case, a certain number of days are added for the time which is lost in reconnoitring and inspecting a coast. It is from these data, that the time necessary for making the runs, and remaining in port, has been estimated; but all these calculations may be influenced by the circumstances of the ships, the events of the voyage, and unforeseen accidents.

The total duration of the voyage will necessarily exceed four years; it would be impossible in a smaller space of time to fulfil all the objects his Majesty has in view. The periodical returns of the different monsoons in the same time, to
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the north and south of the line, are *data* to which the course is necessarily subjected, and which infinitely oppose the navigation in the neighbouring seas of the archipelagoes, and of the continent of Asia, by the obligation the navigator finds himself under of going into each tract of sea, only when the winds are favourable. This consideration of the monsoons has required different combinations, to accommodate the courses to it, without greatly augmenting the total duration of the voyage, so that each particular run should not exceed the limits prescribed by the quantity of wood and water, which each ship can carry for her complement of men. Further, his Majesty's ships are furnished with stores of every kind, more than sufficient to last a four years voyage, in adding the accidental resources which the accounts of modern navigators have pointed out, and which the foresight and activity of M. De La Pérouse will instruct him how to procure, at the different places where he may put in. The last voyage of captain Cook lasted four years, two months, and twenty-two days; and his vessels were not provided as those of his Majesty will be.

If, as there is reason to expect from the zeal and capacity of the commander of the expedition, all the objects pointed out in his instructions shall have been fulfilled, the voyage of M. De La Pérouse will leave hereafter to navigators, who would attempt discoveries, only the merit of giving to the world more circumstantial details of some portions of the globe.

There remains to be made known the steps which have been followed in the construction of the hydrographic charts, which will be put into

the hands of the commanders of the ships, after his Majesty shall have approved of them.

First a chart of the southern ocean has been prepared, upon which are traced, from the journals of navigators, the courses which have led them to discoveries; and those are pointed out which yet remain to be made or verified. This chart has been constructed from the best French, Spanish, English, and Dutch charts; and it has been subjected to astronomical observations, by which the positions of the principal points of the continents and islands have been determined.

The extent of the great ocean, commonly called *the South Sea*, or *Pacific Ocean*, has necessitated the division of it into three bands or zones, of which the first contains the Austral Ocean, or the space contained between the antarctic circle, and the tropic of Capricorn.

The second, the great Equatorial Ocean, or interval comprized between the two tropics.

The third and last, the great Boreal Ocean, or the seas enclosed between the tropic of Cancer, and the arctic circle.

As the courses of M. De La Pérouse will not carry him beyond the sixtieth parallel of north and south latitude, it has been thought useless to trace, on the charts prepared for his voyage, either the great Polar Boreal Ocean, or the great Polar Austral Ocean.

To accomplish the laying down the chart of the Great Ocean, the journals of all the navigators of this century, and of those of anterior periods, who have navigated this sea, have been consulted. The plans of the details which they have given have been consulted, and by reducing their scale, they have been made to enter into this general

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general chart. The known tracks of all navigators, ancient and modern, are traced thereon, in order to place under one point of view, the recent discoveries, with those of former periods, and to prove in certain cases, their identity.

This general chart of the Great Ocean is the result of all that navigators and geographers have produced up to this time. It will not be endeavoured to represent here in detail the various materials, which have been examined, and employed; the mere enumeration would require a volume. All that remains to be done is, to join to the King's instructions to M. De La Pérouse a few geographical and historical notes, upon some parts which require to be more particularized, and there will be added to the two charts of the *Southern Atlantic Ocean* and *Great Ocean*, a collection of thirty-seven other charts, or original manuscript plans, of the least frequented parts of those seas.

Extract from M. De La Pérouse's general Instructions.

26th June, 1785.

HIS Majesty authorizes the Sieur De La Pérouse to grant some months pay to the crews as a bounty, the quantity of which he will regulate according to circumstances: he will only observe, that the sum of such bounties, during the whole voyage, must not exceed one year's pay. Besides these bounties, which he will grant

according to merit to the petty officers, sailors, and soldiers, he will give the two crews to understand, that it is the intention of his Majesty, that the pay of those who should die during the voyage, reckoning from the day of their decease, should be thrown into a mass, to be distributed in gratification to the people composing that crew, of whom the deceased man made one; and that the pay acquired unto the day of his death be accounted for to his family, as well as the value of his clothes, if they should have been distributed.

N O T E S,

GEOGRAPHICAL AND HISTORICAL,

To be added to the King's Memoir, serving as a particular instruction to Monsieur De La Pérouse, Captain in the Navy, commanding the Frigates La Bouffole, and L'Astrolabe.

SOUTHERN ATLANTIC OCEAN.

Note 1. *The three sunken rocks, situate to the south-south-west of the island of St. Jago, one of the Cape de Verd islands, as well as the French Beacon, and the breakers seen by the Cæsar, in 1730, to the south-south-east of the same island, are laid down after the English chart* of

of the Atlantic ocean, published at London, in 1777, in four sheets *.

2. *Pennedo de San Pedro*. Its latitude, $0^{\circ} 55'$ north, is conformable to that which Monsieur Daprès affirms to have observed in 1750, in the ship *Le Rouillé*. See *Le Discours du Neptune Oriental* of Monsieur Daprès.

He fixes its longitude at $29^{\circ} 0'$ west of Paris, and he deduces it from the difference of longitude known between the island of Ascension and Pennedo, which he fixes at $12^{\circ} 40'$.

But Monf. Daprès then calculated from an observation made in 1754 by the Abbé De La Caille, that the island of Ascension was in $15^{\circ} 19'$ west longitude; and as this longitude, verified and fixed by the observations of captain Cook, is $16^{\circ} 54'$, (second Voyage, vol. 2, page 276 of the original) it thence results, that in admitting the difference of meridians, such as Monf. Daprès gives, between Pennedo de S. Pedro and the Island of Ascension, the longitude of Pennedo ought to be $29^{\circ} 34'$ west of Paris, and is that which has been adopted in the chart put into the hands of Monf. De La Pérouse.

* This chart, for the part comprised between the 14th and 47th degree of north latitude, is the copy and translation of that which was drawn up and published by Fleurieu, and which is added to his *Voyage à différentes parties du monde*, etc. Paris, imprimerie royale, 1773, 2 vol. quarto. (Fr. Ed.)

A description of Pennedo is found in Monf. Daprès's *Discours du Neptune Oriental*, p. 189.

3. *The shoals and banks near the Line* are placed after the instruction of the *Neptune Oriental*, page 9.

The little *Isle de Sable*, or *Island of St. Paul*, which was seen in the same track, in 1761, by the ship *le Vaillant*, commanded by M. Bouvet, is laid down from *Sailing Directions for the East Indies*, London, 1781, page 7. This position is conformable, as to latitude, to that which has been given it upon the general chart, which is joined to the relation of the third voyage of captain Cook, $0^{\circ} 25'$ south, but it differs in $35'$ as to longitude.

Its longitude west from Paris would be $21^{\circ} 25'$, according to the *Sailing Directions*, which give it after the journal of M. Bouvet, but it is carried to $20^{\circ} 45'$, in order that it may agree with the correction of Pennedo. See note 2.

5. *Island of Fernando de Noronha*. This island is laid down conformably to the latitude and the longitude determined by captain Cook.

Latitude - - - $3^{\circ} 53' 0''$ south,

Longitude - - - $34^{\circ} 53' 50''$ west of Paris.

See *Cook's second Voyage*, vol. II, pages 278 and 279 of the original.

The distance of this island from the nearest part of the coast of Brazil being fixed between sixty and

and seventy leagues, according to the Portuguese journals and the Spanish chart of South America, published by Cruz Cano y Olmedilla, in eight sheets, in 1775, the longitude of the coast of Brazil may be considered as determined; and it has been made to conform to that of the Island of Noronha, by giving it 2 deg. $\frac{2}{3}$ of difference to the west.

6. *The Island of St. Matthew* was recognised in 1725 by Garcia de Loaes or Loayza, a Portuguese captain, but it had been discovered 87 years before that period. (*Tratado dos Descubrimentos, &c. de Galvao*, Lisbon, 1731, page 66.) It is placed according to the general chart of *Cook's third Voyage*. The position is uncertain, and that celebrated navigator has regretted not having it in his power to determine it.—*See Cook's second Voyage*, vol. II, page 276 of the original.

7. The latitudes and the longitudes of the *Island of Fernando Po, Prince's Island, St. Thomas, and Annobon*, are fixed, according to the observations made in 1779, by Don Varella, an officer in the Spanish navy, as follows:

Island of Fernando Po,	{	Latitude 3° 28' north,
St. Charles's Road,	{	Long. 6 30 west of Paris.
Prince's Island, at the	{	Latitude 1 39 north.
port - - - -	{	Longit. 5 2 west.
St. Thomas's Island,	{	Latitude 0 20 north.
at the port - -	{	Longit. 4 34 west.
Annobon Island, at the	{	Latitude 1 25 south.
north coast - -	{	Longit. 3 25 west.

According

According to these longitudes, those of Cape Verd, of Sierra Leona, the Isles de Los, and of the Cape of Good Hope, where observations have in like manner been made, the positions of the different points have been regulated from the west coast of Africa.

8. *Ascension Island*, is laid down from the observations of Captain Cook :

Middle of the island { Latitude $8^{\circ} 0'$
Longit. $16^{\circ} 50'$ west of Paris.

(*Cook's second voyage*, vol. II, page 276 of the original.)

According to the Abbé De La Caille, the latitude would be only $7^{\circ} 57'$, and the longitude, deduced from an emerfion of the first fatellite of Jupiter, $16^{\circ} 17'$, (see *Mémoires de l'Académie des Sciences* for the year 1754, page 129) but it has been thought necessary to adhere to the determinations of Cook, which are the results of a great number of observations. There is to be found in the account of the second voyage (*lococitato*) a very particular description of Ascension island.

9. *The Island of St. Helena* is also placed after the observations of Cook and those of Halley.

At Fort James { Latitude $16^{\circ} 0'$ south, according to Halley.
Longit. $8. 11$ west of Paris, according to Cook.

(*Cook's second Voyage*, vol. II, page 270 of the original.)

According to Mr. Maskelyne, astronomer-royal at Greenwich, the latitude of the island of St. Helena is $15^{\circ} 55'$, and its longitude, deduced from an observation made by him of the first satellite of Jupiter, would be $8^{\circ} 9'$.—(British Mariner's Guide, 1763, in quarto.)

10. *Island of Trinidad.* This island is placed, from its distance to Cape Frio, on the coast of Brazil, such as it is given by Monf. Daprès, (*Discours du Neptune Oriental*, page 10) from which it results:

North coast, $\left\{ \begin{array}{l} \text{Latitude } 20^{\circ} 25' \text{ south.} \\ \text{Longit. } 32 \text{ } 15 \text{ west of Paris.} \end{array} \right.$

Isle dos Picos is laid down according to the Dutch charts, subjecting its position to that of Trinidad.

11. *Islands of Martin-Vas.* These are three rocks which lie respectively to each other north and south, except the most northerly, which is a little more to the westward; they do not occupy more than a mile in extent.—(Extract from the *Original Journal of Halley*, printed in the *Collection of Voyages in the Southern Atlantic Ocean*, by A. Dalrymple, London, 1775, in quarto, page 53.)

In the *Journal de M. Lozier Bouvet*, (printed in French, *ibid*, page 7 of this journal) it is said, that the small islands of Martin Vas are at eight leagues distance, and bear east $\frac{1}{4}$ north of the *Island of Trinidad*. Their latitude is the same as that of this island.

12. The

12. *The Island of Ascencao*, on the coast of Brazil, is placed according to the notes of M. Daprès, page 9 of *Discours du Neptune Oriental*:

Latitude	-	-	20° 25' south
Longitude	-	-	38 0 west of Paris.

This position supposes, that its distance from Cape Frio is 120 leagues, as M. Daprès shews (ibid page 9).

13. *Rock discovered in 1692, and sunken rock in 1701.* These dangers are placed after Mr. Dalrymple's chart of the South Sea, which is to be found at the end of the work cited in the 11th note.

14. *Island Sazenburgh.* This island was discovered in 1670 by John Lindestz Lindeman, a Dutchman, in $30^{\circ}\frac{1}{2}$ of south latitude, and about 22 degrees of west longitude from Paris, being aware of the change made in the position of the other islands in the same track of sea, with which navigators were led to place it by the bearings and distances of their reckonings.—See *Navigations aux Terres Australes*, by the President De Broffes, vol. II, page 48.

15. *Kattendyke* is laid down according to Dalrymple's chart belonging to the work cited in the 11th note, and from the general chart of *Cook's third Voyage*.

16. *Islands of Tristan d'Acunha.* The rule followed for laying down these islands is from the instruction of M. Daprès (page 10 of *Neptune Oriental*) which fixes the latitude of them between

$37^{\circ} 10'$ and $37^{\circ} 45'$ fouth, and their longitude at $16^{\circ} 30'$ or 17 degrees west of Paris, from a mean result between the different courses of several ships, which point out 34 degrees for the difference of longitude between these islands and the Cape of Good Hope, which is $16^{\circ} 3' 45''$ east of Paris.

Halley says, in his journal, that he has determined the latitude of the most southerly of these islands to be $37^{\circ} 25'$ fouth.—See page 41 of his journal in the work of Mr. Dalrymple, cited in note 11.

A description of these islands is to be found sufficiently particularized in the instructions of *Neptune Oriental*, by M. Daprès, page 10.

Beside the anchorage of the north of the principal of the islands of Tristan d'Acunha, marked in the chart put into the hands of M. De La Pérouse, it is further known (from the report of a navigator worthy of credit, whence the following particulars are learnt) that there is a kind of port or haven to the east of the southern point : this port is not visible in running down the coast, because it is concealed from the view by great canes or reeds, which being thrown down and lying upon the surface of the water, cross each other by certain winds, and totally mask the entrance of the port ; it may be half a mile in breadth by three quarters of a mile in length ; its figure is very nearly that of a horse shoe. The water is found

to

to be twenty-eight fathoms in the middle of the entrance, and fourteen near the shore; the depth of water is also fourteen fathom in the middle of the length, and ten fathom only at the head of the harbour; the bottom is a black sand, and good holding ground.

It is necessary to observe, that the southern point, that is to say, that of the south west of the island, is terminated by some rocks or breakers, which run out near a quarter of a mile; they are not laid down upon the chart delivered to M. De La Pérouse, because it is a copy, without the least alteration, of the only plan known of these islands, upon which these breakers are not laid down.

17. *Island of Diego d'Alvarez.* It is laid down after the general chart of *Cook's Third Voyage*, and by the islands of Tristan d'Acunha, preserving the bearing and distance which this chart gives it from these last islands.

Latitude	-	-	38° 53' south.
Longitude	-	-	13 0 west of Paris.

18. *Gough's Island.* So called from the name of an English East India Captain, who discovered it in 1715. In the *New Directory for the East Indies*, by W. Herbert, W. Nicholson, and others, (5th edition, 1780, pages 371 and 372) it appears, that Gough Island is a high land, situate in 40° 15' south latitude, and 1° 57' to the west of Greenwich, or 4° 17' to the west of Paris. Captain

tain Vincent, commanding the *Osterley*, a ship belonging to the same Company, also made Gough Island in 1758, in the latitude pointed out by him who discovered it; but he believes, according to his reckoning, that in placing it in $1^{\circ} 57'$ west of Greenwich, it is carried a few degrees too far to the east.

This island is not known to French navigators, but, as it may be fallen in with by ships, which, willing to go directly to the Indies or to China, early in the season, without touching at the Cape of Good Hope, might keep in higher latitudes, in order afterwards to make the islands of Saint Paul and Amsterdam, it will, without doubt, appear interesting to determine its true position, and it is to be wished, that M. De La Pérouse, who has the means of doing it, may be near enough to give it his attention.

19. *Ile Grande of La Roche*. This island is only to be placed by conjecture from the following account, which has been extracted and translated from the Spanish work entitled *Descripcion geographica y derrotero de la Region austral Magallanico, etc. por el Capitan don Francisco de Seixas y Lovera; en Madrid, 1690 in 4to; fol. 29.*

“ In the month of May, 1675, Anthony De La Roche, a Frenchman by birth*, then in the service
“ vice

* It is surely by mistake that captain Cook, in the general introduction to his second Voyage, page xv. of the original,

“ vice of the English, returning from the island
 “ of Chiloe, on the coast of Chili, having doubled
 “ Cape Horn, and wishing to enter into the South
 “ Atlantic Ocean by the Straits of le Maire, (it was
 “ not known then that there was a channel to the
 “ east of Staten-Land) met with strong westerly
 “ winds and rapid currents, which carried him so
 “ far to the eastward, that it was impossible for
 “ him to get hold of the land which forms the
 “ Strait of Magellan. The month of May was
 “ already far advanced; the winter was beginning
 “ in these climates, and la Roche began to de-
 “ spair with regard to his voyage. His uneasiness
 “ grew greater still when he saw unknown land
 “ before him to the eastward*; he did all he could
 “ to approach and survey it, and he succeeded in
 “ fetching a bay, in which he anchored near a
 “ cape or a point of land, which stretched to the
 “ south-east. Here he found twenty-eight, thirty,
 “ and forty fathom water, sandy and rocky bot-
 “ tom: he distinguished on the land, not far from
 “ the coast, some mountains covered with snow:
 “ he was exposed to very squally weather, and

nal, in speaking of Anthony La Roche, represents him as an
English Merchant.

* This land, as will be seen in the following note, is the
 same that M. Duclos Guyot made in 1756, and that captain
 Cook, when he inspected the north-east coast, denominated
Georgia Island.

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" stayed there fourteen days. The weather at
 " last cleared up; he then found out that he had
 " anchored at one of the extremities of this land,
 " and he discovered, to the south-east and to the
 " south, other high lands covered with snow.—
 " A little breeze from the south-east enabled him
 " to get under way, and, while making sail, the
 " coast of the said island* bore west, and the
 " southerly lands south and south east: it ap-
 " peared to him, that the channel between the
 " island and the main was about ten leagues
 " in breadth; the currents drifted him with vast
 " swiftness to the north-east; and in steering
 " to the east-north-east, he found himself, in an
 " hour and a half, out of the passage, which he
 " said was very short, because the new island,
 " which forms this channel, with the land to the
 " south east, is very small†.

" In quitting this island‡, he ran for twenty-

* This supposes what is not expressed in the narrative, that he had anchored at the point of a main land which had an island to the west or to the north west.

† It appears that La Roche passed, as well as Cook, between the islands called by the latter *Willis Island* and *Bird Island*, but that he judged ill concerning the size of the channel.

‡ La Roche, in speaking of the variation of the compass near the east coast of his straits, says, that it was 19 degrees. (*Antonio de la Roche, en su Derrotero, fol. 22 & 23.*—See *Seixas y Lovera, fol. 47.*)

“ four hours to the north-west, then he was overtaken by so violent a southerly gale, that it obliged him to run for three days northward, as far as the forty-sixth degree of south latitude.

“ The wind moderated, and La Roche, then thinking himself out of danger, stood for All-Saints Bay, and in the latitude of 45 degrees met with an island which he reported to be very large, agreeable to the view, and having a good harbour in the eastern part, in which he found water, wood, and fish; but he saw no inhabitants during the six days he passed there.

“ From this harbour he went to All-Saints Bay.”

In laying down *Isle Grande*, the position of the first land that La Roche discovered to the eastward of *Staten Island*, and which has been found again in these latter times (the Georgia Island of Cook) has served as a guide. In consequence the south coast of *Isle Grande* is laid down in 45 degrees of latitude, according to the indication of La Roche, and at about thirty leagues more westward than the first land he discovered, because it has been observed that in quitting this he ran twenty-four hours to the north-west; and that it is probable that the gale from the south, by which he was overtaken, partook a little of the south-east wind which had blown to that time; and, in short, that

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that after the gale of wind ceased, until the discovery of *Ile Grande*, in 45 degrees of latitude, he had constantly made nothing, which was his course to the Bay of All-Saints.

Every thing leads to a belief, that the *Ile Grande* of *La Roche* is the same land that Americus Vesputius discovered in his third voyage in 1502.—The geographers of the last two centuries have assigned different positions to this land of Vesputius, because they were unacquainted with the original journal of that ancient navigator; and because it has not been found since the period of its discovery, modern geographers have effaced it from their charts. However, in consulting the original letters of Americus Vesputius, in which he gives an account of his voyages*, it appears that it is not impossible to fix, very nearly, the position of the land which he discovered in 1502. He says, in the journal of his third voyage (page 54 of his letters) that having gone out of a harbour from the coast of Brazil, situate in 32 degrees of south latitude, (this may be the harbour called *San Pedro*) he ran south-east as far as 52 degrees of latitude, where he no longer saw the stars of the Lesser Bear, or those of the Greater. It is

* *Vita e Lettera di Amerigo Vesputi raccolte ed illustrate dall' abate Angelo-Maria Bandini.* Firenze, 1745, 1 vol. in 4to. See also *Novis Orbis*: Basileæ, 1555, in fol. page 226 and following.

necessary to observe, that Vesputius, in speaking of his course, paid no attention to the variation of the compass, which, at the time of his voyage, must needs have been, in these seas, from 19 to 20 degrees east, and therefore this, which he calls a south-east coast, ought to be considered as having been in fact nearly a south-south-east course: consequently, on departing from the coast of Brazil, in 32° 0' of latitude, to cross the parallel of 52° 0' by a south-south-east course, the point of section is found at about 44° 0' to the west of Paris, that is to say a little to the west of the meridian, under which Isle Grande is supposed to lie, and 140 leagues, or thereabouts, south, a little westward of this island. Vesputius, being in this position, the third of April, was overtaken by a gale of wind, which obliged him to run under bare poles; he continued to run in this way till the 7th, when he fell in with new land, which he coasted for the space of twenty leagues; it appeared to him to be of difficult access, without harbour and without inhabitants. Seamen will agree, without any stretch of imagination, on the probability, that during the four days that Vesputius was driven to the northward by a violent south-west wind, he might run, though under bare poles, thirty-five leagues in every twenty-four hours; and that he might consequently be driven as far as 45° 0' of latitude, having set out at 52° 0'. What
may

may give to this opinion considerable weight is, that Vespuccius said, that in quitting the new land he judged himself to be thirteen hundred leagues from the coast of Ethiopia (from Sierra Leona) where he landed the tenth of May following, and that to arrive there he constantly steered between a north and north-east course, therefore, Sierra Leona lies north-north-east two or three degrees east of Isle Grande, (according to its position in the chart given to M. De La Pérouse) and at twelve or thirteen hundred leagues distance. After all, no island is known at this distance from the coast of Ethiopia, and in the direction of north-north-east and south-south-west, which can present an uninterrupted continuance of twenty leagues of coast; and as the veracity of Vespuccius, upon a fact of this nature, cannot be suspected, his testimony ought to be regarded as an ancient proof of the existence of Isle Grande, confirmed by the more recent accounts of Anthony De La Roche.

20. *Terre or Island of La Roche*, by Cook denominated *Georgia Island*. The preceding note has shewn the epoch and the circumstances of the discovery of this island by Anthony De La Roche; but the relation that Seixas has left us does not point out the latitude; we only know that, to come from this land to Isle Grande, which La Roche felt in with in $45^{\circ} 0'$, he ran twenty-four hours to the north-west, and that a strong southerly wind had

blown him for three days to the northward; but it cannot be doubted, that the first island or land which he discovered was to the eastward of *Staten Island*, and that this same island had been re-discovered, in 1756, by M. Duclos Guyot, before captain Cook noticed it in 1775, and had determined its position.

M. Duclos Guyot, of St. Malo, commanded the Spanish vessel the *Lion*, returning from Lima. He doubled Cape Horn, entered the Southern Atlantic Ocean and found himself to the eastward of *Staten Island*.

"The 28th of June, 1756," says M. Duclos Guyot, "at nine o'clock in the morning, we thought we saw land ahead, though very distant, appearing like clouds, and of an extraordinary height; at that time we were standing to the north-north-east. The haziness of the weather did not allow us to convince ourselves of it; moreover, not suspecting we could be nearer any land than the *Malouines*, which, according to our reckoning, bore west-north-west, distant 135 leagues, and finding ourselves at noon to be in $55^{\circ} 10'$ latitude by observation, and in $52^{\circ} 10'$ longitude, west of Paris, by our reckoning, we continued our course without regard to land. The 29th at noon having gotten sight of a little island before us, we put about, and sounded three hundred fathom, no ground.

"At

" At nine o'clock we discovered a continent of
" about twenty-five leagues in length, lying north-
" east and south-west, full of steep mountains, of
" a frightful aspect, and of so extraordinary a
" height, that we could scarcely see their summits,
" though at more than six leagues distance; the
" quantity of snow which covered them hindered
" us from observing whether they were wooded.
" The observations upon which we can best rely,
" and which we were able to make (being then
" three leagues from the little island, which was
" at an equal distance from the great land), are,
" that there is a very deep creek in this continent,
" lying about eight leagues east and west from the
" said island; it was the only place which appeared
" to us proper to be inhabited; we might have
" been ten or eleven leagues off. It appeared to
" us to be of great extent as well in length as in
" breadth; there is on the larboard hand, at its
" entrance, to the north-north-west of us, a low
" point, the only one we could see from its mouth;
" it appeared to us detached from the main land;
" we even thought that it was an island, or that,
" if it joined the land, it must have been by an
" isthmus.

" The 30th at break of day, we might have
" been at ten leagues from this new land; in this
" position we observed no current, and we found
" no bottom; we always saw plenty of birds and
" sea wolves.

“ At noon, the land presented the same aspect,
“ except the summits of the mountains, which
“ were covered with clouds; the calm and very
“ fine weather enabled us to take a good observa-
“ tion, and at noon we found the latitude $54^{\circ} 50'$,
“ our longitude, by reckoning, was $51^{\circ} 32'$ west.

“ The first of July, at day break, thinking our-
“ selves far enough from land, we steered east-
“ ward, to observe if the said land extended itself
“ further in this direction. At eight o'clock in
“ the morning we saw its most easterly point, bear-
“ north 5 degrees east*, distant about twelve
“ leagues; at noon, continuing the same course,
“ we were in $55^{\circ} 23'$ latitude by account, and
“ $51^{\circ} 0'$ west longitude.

“ The 2d, light breezes from west-south-west
“ to west-north-west, hazy weather, abundance
“ of snow; course east-north-east. Endeavouring
“ to discover the length of the land on this side,
“ at the break of day, there being a settled calm,
“ we found ourselves surrounded by pieces of ice
“ of different forms, many of them being at least
“ thirty-five fathom elevated above the water, and
“ more than a mile and a half in extent; we re-
“ marked also, that there was a strong current, and

* The 28th of June, at night, the eve of the discovery,
the variation of the compass was observed thirteen degrees
and a half east; and the fourth of July it was thirteen de-
grees.

“ we

" we saw many more birds than usual, especially a
 " great quantity of entirely white pigeons, like
 " those of the coasts of Patagonia, and also many
 " whales; from all these remarks we thought, that
 " we might be upon a bank. In consequence we
 " sounded, but without finding any bottom; we
 " were then out of sight of land; latitude by ac-
 " count $55^{\circ} 28'$, longitude $49^{\circ} 40'$ west."

After that day M. Duclos Guyot never saw the new land more, to which he gave the name of *Ile De Saint Pierre*.

On his landing at St. Jago, one of the Cape de Verd Islands, he discovered (as he had imagined, by the variation of the compass, which he had found to be $13^{\circ} \frac{1}{2}$ and 13 degrees, instead of 19, that which ought to have been expected by the longitude he reckoned himself in when in sight of the Island of St. Pierre) that the currents, after he had doubled Cape Horn, had carried him $10^{\circ} 56'$ eastward of his reckoning. " Consequently (says M. Duclos Guyot) the position of the land, that we discovered the 29th of June, may be determined; being ten leagues to the southward, when we had the best sight of it, (the 30th) our latitude by observation was $54^{\circ} 50'$, and our longitude by reckoning $51^{\circ} 32'$ west." Deducting the $10^{\circ} 56'$ which the vessel was driven eastward, there remains for the longitude of the island $40^{\circ} 36'$ west of Paris, which M. Duclos Guyot

Guyot reduces to $40^{\circ} 30'$ for the most easterly part he saw; and he fixes the latitude of the most southerly part at $54^{\circ} 20'$.

Captain Cook lays down the Isle de Saint Pierre (or *Georgia* as he calls it) between $53^{\circ} 57'$ and $54^{\circ} 57'$ of latitude, and between $40^{\circ} 33'$ and $37^{\circ} 54'$ longitude west from Paris. (Cook's second voyage, vol. 11, page 218 of the original) It may be seen, that the position which M. Duclos Guyot assigned to this same land is not very defective, although he was unprovided with the necessary means for determining the longitude with precision; his error arises from the length of the island only from east to west, and there is no navigator who ought not to meet with it after the position he has given to it, especially if it be sought on the west side; his error consisted in laying it down about 30 leagues too much to the westward.

M. Duclos Guyot, in terminating what concerns his Isle de Saint Pierre, says, "these are our best authenticated remarks, and we do not doubt, although we cannot assert it positively, *that there is other land to the eastward of that which we have seen*: every thing demonstrates it; sea-weeds, ice, fishes, trees, and birds."—It was in the year 1756, that he expressed himself in this manner.

21. *Sandwich Land*, discovered in 1775. It is placed on the chart from the journal and the calculation

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culatation of captain Cook. See his second voyage, vol. 11, page 222 and following, in the original.

This land calls to recollection the Gulf of San Sebastiano, and the land marked upon the ancient chart, fouth and fouth-east of the *Terre De La Roche*.

22. Christmas Sound, upon the fouth-west-coast of *Terra del Fuego*. See the chart and the journal of Cook's second voyage, vol. 11, pages 177 and 198 of the original.

GREAT SOUTH SEA.

23. Drake's Island and Harbour, placed by geographers at a hundred and eighty, or two hundred leagues west-fouth-west of Cape Horn. There have been many accounts of Sir Francis Drake's voyage round the world, published in England: they differ essentially, one from the other, respecting the position of the lands discovered by this celebrated navigator, after his passage through the Straits of Magellan.

According to the most ancient of these accounts (that of Hackluyt, published in his *collection of voyages by Englishmen**;) after Drake's squadron was out of the Straits of Magellan,

* The principal navigations, voyages, traffiques, and discoveries of the English nation, &c. London, 1598, 99, 1600; in fol. Vol. III, page 744.

and

and had passed into the South Sea, the 6th of September, 1578, his ships stood to the north-west, for three days, after which the wind blew from the north-east with so much violence, that they could only make a west-south-west course; they continued this course for the space of ten or twelve days, not having been able to carry much canvass; the heaviness of the gale then obliged them to furl all, and they lay to under bare poles till the 24th of September. The same day one of the ships of the fleet parted company, the wind, which became more moderate, allowed the others to carry a little sail; they stood to the north east seven days. They then discovered some islands, towards which they stood in order to come to an anchor; but the weather frustrated their purpose: the wind shifted to the north-west, and they made a west-south-west course. The day following, the 1st of October, the weather being very bad, a second ship parted from the fleet, and the admiral was left alone. Drake ran then to 57 deg. of latitude, where he anchored, in the harbour of an island, within gunshot of the shore, in twenty fathom water.

He staid there three or four days; and the wind having blown round to the south, he weighed anchor, and stood to the northward, for the space of two days. He then discovered a little island, inhabited, under which he lay to, in order to
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send a boat off, which returned with a great many birds, seals, &c.

Another account published by Purchas, in his *Hackluytus posthumus**, is thus expressed.

The 7th of September, 1578, Drake was overtaken by a tempest, which drove him from the west entrance of the Straits of Magellan, more than two hundred leagues in longitude, and carried him a degree to the south of the straits. Thence he ran to the 57th degree of south latitude, where he met with a number of islands, among which he anchored, and which furnished him with very good water, and excellent herbs. He discovered another bay, where he found naked inhabitants, who used canoes, and held communications from one island to another; he made several exchanges with them.

At length, quitting this bay, and standing to the northward, he, on the 3d of October†, met with three islands, of which one was remarkable for the prodigious quantity of birds he found there, and which surpass, says the narrator, whatever can be conceived, &c.

* *Hackluytus posthumus*, or Purchas his Pilgrims, &c. London, 1625, in fol. Vol. I, page 50, of the Circumnavigations of the Globe.

† This date is evidently false: it is probable that it is a fault in the printing of the original; and that it is necessary to read the 30th, instead of the 3d.

The third relation is that of Francis Fletcher*, employed in the expedition, and aboard the same ship with Drake, in quality of chaplain. This is conformable but in a small degree with the two former; but it is the account of an eye witness, of a man who ought not to be devoid of instruction; on the other hand we are ignorant as to the authority on which the others are founded; and as an ocular witness, Fletcher appeared to us to deserve most belief: besides, we find in his recital a concordance as to facts, a narrative regularly followed up by the events of Drake's voyage, which are not met with in the two other accounts.

According to Fletcher, in the beginning of September, 1578, Drake was near the opening of the Straits of Magellan, in the South Sea: arrived at this point, he saw nothing but islands, among which it was impossible for him to distinguish the real channel. He anchored at one of the islands on the south side; he went himself, in a boat for discovery, and he satisfied himself, that the passage was open to the north. After having visited this island, and conversed with the inhabitants, he put to sea again, and on the 6th of September he was clear of the

* *The world encompassed by Sir Francis Drake, collected out of the Notes of Mr. Francis Fletcher, preacher in this employment, and others, &c.* London, Nic. Bourne, 1652, in 4to.

land.

land. He much regretted not having been able to land at the last of the points which he discovered in entering into the South Sea; he desired to leave a testimony there of his having taken possession of it; but he saw no place proper to disembark at, and the wind did not allow him to wait.

The 7th he was overtaken by a violent tempest, which occasioned him to be drifted to the south, as far as 57 degrees of latitude, without his being able to discover any land: here one of the ships parted from the fleet.

The weather afterwards allowed him to stand to the northward, and, the 7th of October he anchored in a bay, a little to the north of this same point (which must be Cape Pillar,) where, the 7th of September, he regretted not being able to leave some proof that he had taken possession of the spot.

A second gale of wind drove him from this anchorage, where he left his anchors; at this time the rear admiral parted company in the gale, re-entered the straits, and getting again into the Atlantic Ocean, arrived in England the 2nd of June following: this circumstance occasioned him to give to the anchorage ground, which he quitted, the name of *Bay of the Separation of Friends*. Drake drifted, this second time, as far as 55 degrees of latitude; and, in this parallel, he found
I himself,

himself, so says the account, among the islands situate to the south of America, of which mention had been made as soon as he entered into the Great Sea, and which form, with the continent, the outlet of the straits. He anchored at these islands, and got two days rest: he filled water, and found herbs, the use of which was highly salutary to his crew.

A third gale forced him to sea: it was impossible he could carry any sail, and the coast, to leeward, presented nothing but rocks and dangers.

Happily, at some leagues to the southward of the former anchorage, he succeeded so far as to find another, still among the same islands. It was here that he saw the natives of these places sailing from one island to another, with their wives and children; and he made some exchanges by way of traffic with them.

After three days, a fourth gale surprized him at anchor, and forced him to cut the cable. He gave himself up to the sea again, until at last, says Fletcher, the 28th of October, "we reached the most southerly parts of these islands, and thus discovered the extremity of America, the nearest to the pole." This extremity, adds he, is situate near to the 56th degree of latitude, (it is Cape Horn): beyond it there exists no continent, no island; here the two seas meet.

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Drake gave all the islands which he had seen after his passage through the straits, even to the most southerly, the name of *Elizabethides Islands*.

Fletcher observes, that, at this last island, there were only two hours night; and as the sun was then seven degrees from the tropic of Capricorn, it may be concluded, says he, that the day that this luminary passes the tropical circle, there ought to be no night. This conclusion proves, that Fletcher was very ignorant of astronomy: all the world knows, that, to have no night, the day of the solstice, it is necessary to be situated under the polar circle, that is to say, at $66^{\circ} 32'$; and Fletcher has just said, that he was only at 56° degrees of latitude. It is notwithstanding from this error, that some geographers have been led, to place the land, thus discovered by Drake, under the antarctic circle.

Drake, after being two days at this last anchorage, made sail directly to the north-west; and, the following day, he met with two islands very abundant in birds: he stopped there a little time; and the 1st of November he pursued his course to the north-west, &c.

After having examined, with attention, the facts which Fletcher's narrative furnishes, it is impossible to do otherwise than conclude, that the land, which geographers have called *Drake's Land*, is only the westerly part of the *Terra*

del Fuego; that, the 28th of October, Drake arrived at the islands of Cape Horn; and that, the next day, standing again to the north-west, he met with some of those numberless islands, which compose the archipelago of the *Terra del Fuego*.

Although it may thus appear to be proved, that the pretended Drake's Land does not exist, there has been an unwillingness, notwithstanding, to efface it from the charts: almost all the geographers, except those who have carried it either to 60 degrees of latitude, or under the polar circle, have placed it about a hundred and eighty leagues to the west-south-west of Cape Horn, or 10 degrees to the west of the longitude of the mouth of the strait, and in the 57th deg. of south latitude.

It is not to be doubted, but that, if the weather should favour M. De La Pérouse, he will one day furnish a verification, which will be useful in destroying a geographic error without its recurring again. Cook, in 1769, and Furneaux, in 1775, followed tracks, which, if this Drake's Land existed at the place which geographers have assigned it, would have put it in the power of these navigators, if not of seeing it, at least of observing some sign, some indication of land; and it is well known, that neither one nor the other perceived any.

24. *Terre*

* *Dalb*
London,
† Print
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24. *Terre de Theodore Gerard.* Theodore Gerard, one of the first Dutch navigators, who have made a voyage in the Great Ocean, was carried by a storm, in 1599, as far as 64 degrees of south latitude, where he discovered a mountainous land, covered with snow, the aspect of which appeared to him the same as that of Norway*: it is placed 16 degrees to the west of the meridian of Cape Horn.

25. Land said to have been seen by the Spaniards, in 1714.

To prove the existence, and pretty nearly fix the position of this land, the annexed account has been followed, taken from a "*Mémoire pour la France, servant à la Découverte des Terres Australes,*" by a seaman of Saint Malo, named Bernard De La Harpe†.

"In 1714, the captain of a Spanish brigantine left Callao to go to the island of Chiloe, and being in 38 degrees of south latitude, and at five hundred and fifty leagues (Spanish, 17½ to a degree) to the west of Chili, discovered an elevated land that he coasted a whole day;

* *Dalrymple's Historical Collection of Voyages, and Discoveries* London, 1770, in 4to, vol. I, page 94.

† Printed at Rennes, chez Vatar, 15 pages in 4to. See also the *Mémoire de Pingré, sur le choix et l'état de lieux pour le passage de Venus du 3 Juin 1769*; Paris, Cavelier, 1767, 4to.

“ he judged by the fires he observed during the
“ night, that it must be inhabited. Contrary
“ winds having obliged him to put in at *Concep-*
“ *tion*, he found there a ship called the *Fran-*
“ *çais*, commanded by M. Du Fresne-Marion,
“ who affirms he has seen the journal of the Spa-
“ nish captain, and has read the fact which has
“ just been related.”

These islands are placed on the chart of the Great South Sea, in 38 degrees of south latitude, and between 108 and 109 degrees of west longitude. This position agrees with the opinion of captain Cook. See his second voyage, vol. II, page 274, of the original.

These islands call to recollection the discovery attributed to Juan Fernandez, a Spanish pilot, under the name of *Terres De Juan Fernandez*, which the charts lay down to the west of Chili. This navigator died without having pointed out the latitude and longitude of his discovery: it is only known, that, about the year 1576, he ran 40 deg. to the west of the coasts of Chili, having steered west, and south-west, and after a month and half of navigation, he reached a land, which he described as being a vast continent. This distance of 40 degrees of longitude, to the west of the coasts of Chili, is not far removed from that, where the land said to have been discovered by the Spaniards, in 1714-

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is placed. See, for the land seen by Juan Fernandez, Dalrymple's Historical Collection of Voyages and Discoveries, vol. I, page 53; and the Voyages translated from Dalrymple by M. De Fréville, page 125.

26. Isle De Pâque, or Easter Island. This island, discovered in 1722, by Roggewein, a Dutchman, was seen and visited, in 1774, by captain Cook, who determined the position of it. See his second voyage, vol. 1, page 276, of the original.

The Spaniards touched at Easter Island, the 16th of November, 1770, and called it *San Carlos*, or Saint Charles. There is added to the collection of charts, with which M. De La Pérouse is furnished, the plan which the Spanish ships had taken of this island, round which their boats made a tour. They place it in $27^{\circ} 6'$ south latitude, and $268^{\circ} 19'$ from the meridian of Teneriffe, or $110^{\circ} 41'$ west of Paris; that is to say, they have carried it too far to the east, by about one degree and half.

The variation of the compass there, according to the Spaniards, in 1770, was $2^{\circ} 30'$ east.

27. Islands said to have been seen by the Spaniards, in 1773, in 32 degrees of south latitude, and 130 degrees west of Paris.

This position is the same which is given from the account of M. Croizet, captain of a French

ship; and is that which captain Cook had adopted. See his second voyage, vol. II, page 267, of the original.

It appears, however, that this position may be disputed; and upon the following grounds:

It was at their return from Otaheite, in 1773, that the Spanish ships discovered the islands situate in 32 degrees of latitude; and it is highly probable, that the longitude they assigned to these islands, (with which M. Croizet had been acquainted) is affected with the same error they made as to the longitude they assigned to Otaheite. By the extract of their voyage to this island, communicated to one of M. Surville's officers, during their stay at Lima, it may be seen, that the Spaniards have placed the island of Otaheite, which they called *Isla D'Amat**, in $17^{\circ} 29'$ latitude, and in $233^{\circ} 32'$ of longitude east from the meridian of Teneriffe, which answers to $145^{\circ} 28'$ of longitude west of Paris. Now the longitude of this island has been determined, by the numerous observations of captain Cook and the English astronomers, at $151^{\circ} 52'$ west of Paris: the position given by the Spaniards is thus an error of $6^{\circ} 24'$ towards the east.

* From the name of the Vice-roy of Peru, who ordered the expedition.

If the longitude of the islands discovered, at 32 degrees of latitude, be affected by the same mistake, they ought to be laid down in $136^{\circ} 24'$ west of Paris, instead of 130 degrees, very nearly under the same meridian that Pitcairn Island is placed.

It is observable, nevertheless, that captain Cook has followed this meridian in his second voyage, without perceiving any thing; he perceived nothing in his first voyage in crossing the parallels of 128 and 129 degrees of longitude: but there is still between these two courses a space of eight degrees, from east to west, not sailed through, in which it is to be hoped the islands discovered by the Spaniards, in 1773, in 32 degrees of latitude, may be again seen.

A general remark may be made, that all the ancient discoveries of the Spaniards, and which there have been opportunities to verify, have been found situate much farther to the west than they had represented them to be; and up to the present time their modern discoveries in the Great Ocean appear affected by an error on the same side.

Captain Cook being in the latitude of these islands, and very near under the meridian they are wont to be placed on after the correction above pointed out, that is to say, $32^{\circ} 30'$ latitude, and $133^{\circ} 40'$ west of the meridian of

Greenwich, or 136° west of Paris, makes an observation deserving mention.

"This day, says he, (22d July, 1773,) was remarkable, by our not seeing a single bird. Not one had passed since we left the land, (New Zealand) without seeing some of the following birds, viz. albatrosses, sheerwaters, pinnatoes, blue petrels, and Port Egmont hens. But these frequent every part of the Southern Ocean in the higher latitudes; not a bird, nor any other thing was seen, that could induce us to think that we had ever been in the neighbourhood of any land." (Cook's second voyage, vol. I, page 135, of the original.)

This observation might induce a belief, that there is but little hope to find the islands or land seen by the Spaniards in 32 degrees of latitude, in looking for them in the longitude of 136 degrees west of Paris, since captain Cook being under this meridian, and nearly in the supposed parallel of these islands, saw not a bird, not a sign of land. There is no foundation, however, for calling their existence in question; and after having given the reasons which leave a great uncertainty upon their true position, there remains only to rely on M. De La Pérouse for taking these reasons into consideration, in the research he will make after them. It must be observed, in concluding this article, that it is very probable
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they are more westward than 136° or west of Paris, since the Spaniards fell in with them in coming from Otaheite to Peru: and it would have been necessary, that they should make more than a good south-east course, with the trade winds south of the line, in order that they should run down 22° or of east longitude, while making only $14\frac{1}{2}$ degrees of latitude.

GREAT EQUATORIAL OCEAN.

28. Islands of the South Sea, or of the Great Equatorial Ocean, between the 26th, and the 10th degree of south latitude, and the space comprised between the 130th degree of longitude, west, and the 170th east of Paris.

For all the islands contained within these limits there is occasion only to refer M. De La Pérouse to the accounts of the voyages of Byron, Bougainville, Carteret, Wallis, Furneaux, and Cook; he will find in them all the geographical, physical, and historical details, which may be useful to him in searching for some of these islands, and in the stay that he may be disposed to make there. With regard to the anciently discovered islands in the same seas, by Mendana, in 1567, and 1595, Quiros and Torrez, in 1606, Le Maire and Schouten, in 1616, Abel Tasman, in 1642, and Roggewein, in 1722, they

they have all been inserted in the chart of the Great Equatorial Ocean, which has been delivered to M. De La Pérouse for his voyage, conformably to the indications which may be drawn from the original narratives published concerning the discoveries of these navigators. The positions given to them on the chart differ much, however, from those which had been assigned from those very narratives; but the proved identity of some of these islands with those which have been recognized by modern navigators, having contributed to rectify many of the ancient determinations, use has been made of some of these rectified points, as foundations to correct one after another, and, at least in part, the positions of some other anciently discovered islands, which have not yet been again found: there are however, many respecting which great uncertainty remains, because the journals of ancient navigators are so devoid of observations and of dates, so sterile in nautical facts, that there can often be drawn from them only unsatisfactory conjectures; their silence about the most interesting circumstances of the voyage sometimes deprives the geographer of all means of combination, of all comparison with other journals, whence lights might be drawn as a guidance through the obscurity.

The

The courses indicated, and the discoveries made by these ancient navigators, will here be summarily traced, as far as they can be deduced from the relations which have appeared to merit the most confidence. It is much to be desired, that chance and happy combinations may enable his Majesty's ships to meet some of the islands thus lost to navigation; which, while offering them, in the course of their discoveries, resources in the necessities of life and refreshments, may also contribute to the extension of human knowledge.

1. *The Voyage of Magellan**, (1519.) From the strait to which this navigator gave his name, he stood west-north-west as far as the equator, which he crossed at 9858 miles from the strait, and near the 170th degree of longitude east from Paris; in this long run he discovered only two little desert islands, at the distance of 200 leagues from each other, viz. San Pedro, in 18 or 19 degrees of south latitude; de los Tiburons, in 14 or 15 degrees of south latitude.

These islands which Magellan called by a general name *Unhappy Islands*, are still unknown; and they are not marked upon the chart of the Great Equatorial

* See the voyage and navigation from the Molucca Islands, by the Spaniards, described by Anthony Pigaphetta;—Ramusio's Collection,—*Decadas da Asia*,—de Barros e Couto;—*Navigations aux terres australes*, by De Brosses;—Dalrymple's Historical Collection, and others.

Ocean, because their position is not pointed out in a manner sufficiently precise. Of all the islands discovered since Magellan, there is only Cook's *Savage Island*, and Bougainville's *Enfant Perdu*, which can represent to us the two *Unhappy Islands*: they are 200 leagues from each other, like these, and nearly in their latitude; *Savage Island* is in $19^{\circ} 1'$ latitude, and $172^{\circ} 30'$ west longitude from the meridian of Paris: *L'Enfant Perdu*, in $14^{\circ} 6'$ of latitude, and $179^{\circ} 2'$ east longitude.

2. *The Voyage of Mendana**, (1567.) From Callao, a port of Lima, Mendana stood to the westward, and made a run of 1450 leagues, (Spanish of $17\frac{1}{2}$ to a degree) without finding land. He discovered then:

Jesus Island, a small one, inhabited, latitude south, $6^{\circ} 15'$.

Candlemas Shoals, a reef of rocks with many little islands; the middle in $6^{\circ} 15'$ of south latitude, and 170 leagues from Jesus Island.

Isabella Island, 95 leagues in length, and 20 in breadth, of which the south-east point is in $9^{\circ} 0'$ of latitude, and the north-west in $7^{\circ} 30'$. They anchored in a harbour which is on the north

* *Geographia Indiana* de Herrera.—*Historia de las Indias*, Lopes Vas.—*Navigations aux terres australes*, by De Broffes.—Dalrymple's Historical Collection.—*Découvertes dans le mer du Sud*, etc.

side, and a brigantine, which was sent thence on discovery, found the islands following:

Malaita, thus called by the Indians, a large island, fourteen leagues eastward of a great bay, in 8 degrees of latitude.

La Galera, a little island of five leagues circumference, surrounded by reefs.

Buona-Vista, twelve leagues in circumference, in $9^{\circ} 30'$ of latitude.

La Florida, twenty-five leagues in circumference, in $9^{\circ} 30'$ of latitude.

San Dimas, } forming a chain which extends east and west with Flo-
Saint Germain, }
La Guadelupa, }rida.

Sefarga, in $9^{\circ} 30'$ of latitude, a round island, of eight leagues circumference, with a volcano in the middle.

Guadalcanar, a very extensive land, with a good harbour.

Saint George, near Isabella Island, from which it is separated only by a channel; a good harbour, and pearls were found there.

Saint Christopher, a narrow and mountainous island, with a good harbour, in 11 degrees of latitude.

Saint Catherine, } two little islands to the
Saint Anne, } east of St. Christopher, three
leagues distant from each
other.

There

There is a good harbour on the eastern shore of the latter.

Beside these islands, cited in the relation of Christopher Suarez De Figueroa, many others are to be found, named in the descriptions of Herrera, and De Bry, and which may be seen also upon ancient charts; such as Saint Nico'as, Arrecifes, Saint Mark, Saint Jerome, &c.

All these islands, since known under the name of *Solomon's Islands*, appear to be the *Terres Des Arfacides*, discovered by Surville, commanding the ship Saint-Jean-Baptiste, in 1769.

3d. *Mendana's second voyage**, (anno 1596.) From Payta, on the coast of Peru, he steered west, as far as 1000 leagues from the coast, without seeing land. Discovery was then made, as follows:

The Marquesas of Mendoca, between nine and ten degrees of south latitude, four islands which were called *La Magdalena*, *San Pedro*, *La Dominica*, and *Santa Christina*; in the western part of this last was found a good harbour, which was called *Madre de Dios*. (They have been again found in 1774 by capt. Cook.)

The islands of San Bernardo in $10^{\circ} 45'$ latitude, and 1400 leagues from Lima, four little low islands,

* *Navigations aux terres australes*.—Historical Collection.
—*Découvertes dans le Mer du Sud*.

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sandy, and defended by a reef of rocks. The circuit round all of them may be eight leagues. (It appears that these are the same islands which were seen in 1765 by commodore Byron, who denominated them *Islands of Danger*; and it is after the reckoning of his course that they have been laid down in the chart in $10^{\circ} 51'$ of latitude, and $169^{\circ} 30'$ of west longitude from Paris.)

La Solitaria, in $10^{\circ} 40'$ of latitude, and 1535 leagues from Lima, a little round island, a league in circuit.—(It has not been seen since, but its position, deduced from its distance from the islands of San Bernardo and Santa Cruz, appears sufficiently exact; it is in $10^{\circ} 40'$ latitude, and $178^{\circ} 20'$ west longitude.)

The island of Santa Cruz, a large island, with a good harbour for anchoring, in $10^{\circ} 20'$ of latitude, and at 1850 leagues from Lima. It was again seen in 1768 by captain Carteret, who called it *Egmont Island*, making a part of Queen Charlotte's Islands; and it is according to the track of this navigator, that it has been laid down in the chart in eleven degrees of latitude, and $161^{\circ} 35'$ of east longitude.

4th. *Voyage of Quiros and Torrez*, (anno 1606.) From Callao, they steered south-west and west as far as a thousand leagues from the coast of Peru, without seeing land. They discovered afterwards as follow :

Encar-

Encarnacion, in 25° of south latitude, and at a thousand leagues from Peru, a little island four leagues round, and so low, that it is scarcely perceptible above the water.

San Juan Baptista, an island twelve leagues in circumference, very high land, two days and a half sail from Encarnacion Island, to the westward.

San Elmo, six days sail from San Juan Baptista; an island thirty leagues in circumference, surrounded by a reef of coral; the middle of the island is covered by the sea.

Las Quatro Coronas. Four inaccessible islands, a day's sail from San Elmo.

San Miguél, at four leagues distance from Quatro Coronas, to the west-north-west; it is ten leagues in circumference, and lies north and south.

La Conversion de San Páulo, to the west-north-west of San Miguél, half a day's sail.

La Dezana, four days sail from Conversion de San Páulo; about the latitude of $18^{\circ} 40'$

La Sagataria, one day's sail from Dezana; a large island, the north-west point of which is in $17^{\circ} 40'$ of latitude. Information was gained at this island, that there was other land to the westward.

There is great reason to believe, that the Sagataria of Quiros is the same island as Otaheite:

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the latitude, the bearing of the coast, that was run down the land spoken of, to the west of the Sagataria, perfectly agree with the island of Otaheite. La Dezana, of Quiros, will, in consequence, be the island of Osnaburg of Wallis, the Boudoir of Bougainville, the Island Maitea of Cook, east-south-east* of Otaheite.

For the other islands which precede La Dezana, it appears, that they have not yet been known. Cook thinks that Pitcairn Island, discovered by Carteret, is the Island of San Juan Baptista, of Quiros; but the difference of size does not permit the adoption of that opinion. San Juan Baptista is twelve leagues in circumference, and Pitcairn is only three: besides, the distance of a thousand leagues, from the Encar-

* It may be seen by these discoveries of Quiros, that there must be a chain of considerable islands south-south-east, and south-east of Otaheite, which may stretch much further to the southward, even to the 32d degree, where we know the Spaniards saw islands in 1773. If very ancient charts might be cited at this time, and regard paid to them, a belief might be entertained that the continent which they represent to have been discovered by Fernand Gallego, and extending itself to the west-north-west, and north-west from Cape Horn, to New Guinea; is nothing else than this chain of islands, which extend further in the south-east, than the point where the discoveries of Quiros commenced: it would be found further west, than the first track of captain Cook, in a space of sea which has not been visited in these latter times.

nacion of Quiros to the coasts of Peru, would place this island to the west of Pitcairn, by some degrees, and so much more the Island of San Juan Baptista; which is two days sail to the west of Encarnacion, as before shown. It is to be observed, that the Marquesas of Mendoca, which are placed at 6° o' to the west of Pitcairn, were pointed out by Mendana as at 1000 leagues from the coast of Peru.

According to Dalrymple (*Historical Collection*, vol. I, page 5,) the Island of San Juan Baptista, would be in 26° o' of latitude, and that of San Elmo, in 28° o'. However it may be, it is in the south-east of Otaheite, that the ancient islands of Quiros must be looked for.

Taking his departure from Sagataria, and continuing his course to the west, Quiros discovered the following islands.

La Fugitiva, two days, or two days and half sail from Sagataria. It was perceived in the north-east; but being too far to leeward, they could not land there.

El Peregrino, one day's sail from *La Fugitiva*. Here also they did not land on account of the wind.

(It is not very easy to know where to place these two islands, unless they are supposed to be some of the Society Islands, or others yet unknown, north-east of those).

San

San Bernardo, six days sail from the Island of Peregrino, and in $10^{\circ} 30'$ south latitude; a level island, six leagues in circumference, and of which a salt water lake, or the sea, occupies the centre.

(This island must not be confounded with those of San Bernardo, discovered by Mendana, and which were four in number. Moreover, Quiros, in a memorial presented to Philip the Third, King of Spain, makes no mention of the Island of San Bernardo, and he cites *Nuestra Señora Del Socorro*, as the name of the Island which immediately follows Peregrino: it appeared uninhabitable).

Gente Hermosa, or Handsome Nation, seven days sail from the Island of San Bernardo, and in the same latitude as Mendana's Island of Santa Cruz, viz. in $11^{\circ} 0'$ south latitude: six leagues in circumference, on which the inhabitants were the fairest and handsomest to be seen in those seas; the women in particular were of rare beauty, and clothed in a light covering. (In the above cited memorial of Quiros, the name of *Gente Hermosa* is not to be found, but instead of it, that of *Monterey*, who was viceroy of Mexico).

Taumago, at thirty-three days sail from the Island of the Handsome Nation, and almost in the parallel of the Island of Santa Cruz: it is a considerably large island, where were found wood,

water, and refreshments, with very peaceable inhabitants. (There it was learnt, as well as from an Indian, who was taken from the place and carried to Mexico, that there were many islands surrounding it, such as Chicayana, Guaytopo, Mecarilay, Fonofono, Pilen, Naupau, &c. which have not been seen since by any navigator. It is remarked that, in the run from the Island of the Handsome Nation to Taumago, there were almost always presages of land, such as a great quantity of pumice stone, and numerous flocks of birds).

Tucopia, six days sail from Taumago, and in 12° 0' of south latitude: in coasting along this island, where they could not go ashore, it was learnt from the inhabitants, that there was much land to the south, sail was made accordingly to that quarter to look for it.

Nuestra Señora De La Luz, a high land, at 14° 30' south latitude. (This island appears to be the peak of *L'Etoile*, to the north of the great *Cyclades* of M. De Bougainville).

Tierra Del Espiritu Santo, and Harbour of *La Vera Cruz*. This land, which was the extremity of the voyage of Quiros, has been since found by M. De Bougainville, who called it *Les Grandes Cyclades*, and afterwards by captain Cook, who named it the *New Hebrides*. This last has preserved in the north, the name of *Tierra Del*

Del Espiritu Santo. On leaving this land, Quiros made sail for New Spain, or Mexico, where he arrived without making any other interesting discoveries: but Torrez, who was separated from the fleet, stood to the westward, and passed between New Holland and New Guinea, in the same manner as captain Cook has since done in the Endeavour.

5th. *Voyage of Le Maire and Schouten** (anno 1616). From the Isle of Juan Fernandez, where these navigators went on shore, after having discovered the Straits of Le Maire, and been the first to double Cape Horn, they stood to the west-north-west 92½ leagues from the coast of Peru, without seeing land; then were discovered as follows:

Hond Eiland, or Island of Dogs, in $15^{\circ} 12'$ south latitude, and at 92½ Dutch leagues (15 to a degree) from the coast of Peru, a little island about three leagues in circumference, but so flat that it is in part overflowed at high water.

Sondre-grond, or Bottomless Island, in $15^{\circ} 15'$ of latitude, and at 100 leagues west of the Island of Dogs, inhabited, and of 20 leagues circumference. According to the relation of Le Maire, its latitude would be $14^{\circ} 35'$, instead of $15^{\circ} 15'$, which the relation of Schouten gives.

* *Diarium vel Descriptio Itineris facti à Guill. Schouteno.*—*Miroir east et west-indical*, etc.—*Speculum orientalis occidentalis-que Navigat.* etc.—*Navigations aux Terres Australes.*—*Historical Collection*, &c.—*Découvertes dans la Mer du Sud*, etc.

Waterland, in latitude $14^{\circ} 46'$, and 15 leagues from Bottomless Island. Water was found there, and a species of cresses, but it did not appear to be inhabited.

Ulyegen, or the Island of Flies, in $15^{\circ} 30'$ of latitude, and 20 leagues from Waterland; a low island, inhabited, where the visitors were assailed by a prodigious number of flies.

The Island of Cocoas, in latitude $16^{\circ} 10'$ south, twenty-three days sail from the Island of Flies; a high island, appearing like a solitary mountain, well peopled, and covered with cocoa nut trees.

The Island of Traitors, in $16^{\circ} 5'$ of latitude, and two leagues to the southward of the Island of Cocoas; the land flat and inhabited. These last two islands were seen again in 1767, by captain Wallis, who gave the name of Boscawen to the Island of Cocoas, and that of Keppel to the Island of Traitors; he found the first in $15^{\circ} 50'$ south latitude, and the second in $15^{\circ} 55'$, which makes a difference only of 15 minutes from the latitude given by Le Maire and Schouten.

It is remarked, that, on the evening preceding their arrival at these islands, Le Maire and Schouten met with a canoe filled with Indians, sailing to the southward, a circumstance which indicates, that there are other islands in that direction.

Goede-Hoop, or the Island of Good Hope, in the same parallel as the Island of Cocoas, and thirty leagues

leagues to the westward: an inhabited island, about two leagues in length from north to south.

Hoorn Eilands, in latitude $14^{\circ} 56'$, and about 1550 leagues from the coast of Peru; two islands situate within gun shot of each other, and inhabited; with a good haven at the southern extremity of the larger one: every sort of refreshment was found there.

At a hundred and fifty-five leagues from the Hoorn Islands, thirteen days after having quitted them, and in 4 degrees of south latitude, signs of land were observed. Then

Four small islands, surrounded by sand banks and shoals, and inhabited, in $4^{\circ} 30'$, and five days before making that part of New Guinea which is now called New Ireland.

Twelve or thirteen islands occupying about half a league from south-east to north-west, three days before reaching New Guinea.

Three low islands, covered with trees, and named in consequence *Groen Eilands*, (Green Islands) one day before reaching New Guinea.

Sight of the Island of St. John.

New Guinea, or eastern coast of New Ireland, distant, by dead reckoning, 1840 Dutch leagues from the coast of Peru.

N. B. Of all the islands seen in this voyage, none have been since found out, except those of Cocos and Traitors, which have been visited by

Wallis; they are laid down upon the chart from the journal of this navigator, and the distance of all the others regulated from that of these two islands.

6th. *Voyage of Abel Tasman*,* (anno 1642). From Batavia, Tasman touched at the Isle of France, then called Mauritius: thence steering to the southward, as far as 40 or 41 degrees of south latitude, and afterwards to the eastward, as far as the 163d degree of longitude from the meridian of Teneriffe, or 144° east of the meridian of Paris, the meridian of Teneriffe being 19° 0' west of the former, he discovered as follows:

The land which was called *Van Diemen's*, in 42° 25' south latitude and 163° 0' of longitude from the meridian of Teneriffe. He anchored in a bay which received the name of Frederic Henry, in 43° 10' of latitude, and 167° 55' of longitude.

Another high and mountainous land, which was called New Zealand, in 42° 10' latitude, and 188° 28' longitude, he anchored in a great bay, situate in 40° 49' latitude, and 191° 41' longitude: the conduct of the natives of the country gave occasion to call it Affassins Bay.

A groupe of islands, called the Three Kings, in 34° 12' south latitude, and 190° 40' longitude,

* *Oud en nieuw oost Indien, etc. door F. Valentyn—Navigations aux Terres Australes.—Historical Collection.—Découvertes dans la Mer du Sud.*

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They were found at the end and to the westward of a length of coast, which was run down from Affassins Bay.

The Island of Pylstaarts, or Wild Ducks, in latitude $22^{\circ} 35'$, and longitude $204^{\circ} 15'$; a high and steep island, of two or three leagues in circuit.

Amsterdam Island, in latitude $21^{\circ} 20'$, and longitude $225^{\circ} 9'$; a low and flat island, the inhabitants of which were hospitable and benevolent. (This is the Tongataboo Island of captain Cook, one of the Friendly Isles).

Island of Middleburg, a high and inhabited island to the S. E. of Amsterdam. It is the Eooa of Cook.

Uitardam, *Namokoki*, and *Rotterdam*, inhabited and cultivated islands, in $20^{\circ} 15'$ of latitude, and $206^{\circ} 19'$ of longitude. (The natives give to the latter island the name of *Annamooka*, which captain Cook has retained).

Prince William's Islands, and the Shallows of Heemskirck, in $17^{\circ} 19'$ of latitude, and $201^{\circ} 35'$ of longitude: these are eighteen or twenty little islands surrounded by shoals and reefs of rocks.

The Islands of Ontong Java, in latitude $5^{\circ} 2'$, and, by dead reckoning, 90 Dutch leagues from the part of New Guinea called at present new Ireland: it is a cluster of twenty-two little islands.

The Islands of Marck. Three days sail from the

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preceding. Another cluster of fourteen or fifteen little inhabited isles, and which had before been seen by Le Maire and Schouten.

The Green Islands. Four days sail from the preceding, and one day's sail before arriving at St. John's Island

The Island of St. John.

St. Mary's Cape. On the eastern coast of New Guinea (now New Ireland) in latitude $4^{\circ} 30'$, and longitude 171° ; thence standing to the north-west along the coast of New Ireland, passing the Islands of Anthony Cave, of Garet Dennis, &c. then to the southward and westward along the northern coast of New Guinea.

All the lands and all the islands seen in this voyage have been seen again in our times, and found in the position which Tasman had assigned them; they are laid down in the chart according to the tracks and observations of modern navigators.

7. *Voyage of Roggewein** (anno 1722). From the Island of Juan Fernandez, Roggewein sailed to the west-north-west, with the intention of making *Davis's Land*, which he did not find. He discovered

Easter Island. In $27^{\circ} 4'$ of south latitude, and $265^{\circ} 42'$ of east longitude from the meridian of

* *Expedition de trois Vaisseaux, &c.—Vies des gouverneurs de Batavia—Navigations aux Terres Australes.—Historical Collection.—Découvertes dans la Mer du Sud.*

Teneriffe,

Teneriffe, according to the author of *Vies des Gouverneurs de Batavia*; which answers to long. $113^{\circ} 18'$ west of the meridian of Paris; an inhabited island, 16 Dutch leagues in circumference, and remarkable for the statues or colossal figures raised in great numbers upon the coast. (It was visited by captain Cook, who found it in latitude $27^{\circ} 5'$, and longitude $112^{\circ} 6'$ west of Paris; and who called it Easter Island. It was also seen, in 1770, by the Spaniards, who lay it down in latitude $27^{\circ} 6'$, and longitude $268^{\circ} 19'$ from the meridian of Teneriffe, which answers to $110^{\circ} 41'$ longitude west of Paris; these last navigators have given it the name of *San Carlos*).

Carls-hof, or *Charles's Court*, in $15^{\circ} 45'$ south latitude, and after a run of eight hundred leagues from Easter Island. According to the French relation of this voyage, it is a little flat island with a kind of lake in the middle. Roggewein believed it was the *Island of Dogs* of Le Maire and Schouten, and the Dutch account assigns neither latitude nor longitude to it: it has been laid down, in the chart, relatively to its distance from the *Mischievous Islands*, which are about twelve leagues to the westward, and the position of which is now known.

Mischievous Islands, in $14^{\circ} 41'$ south latitude, and 12 Dutch leagues to the westward of *Carls-hof*; these are four low and inhabited islands, which

which are from four to ten leagues in circumference. (Roggewein lost a vessel there, a circumstance which occasioned him to give the title of *Mischievous* to one of these islands: two others were called the *Two Brothers*, and another the *Sister*: five men of the crew remained there, who deserted and were left behind. There is reason to believe, that these islands are the same as those of *Palliser*, discovered by Cook in his second voyage, and the English navigator is of the same opinion. See Cook's second voyage, vol. I, page 315, and following).

Aurora Island, eight leagues west of the *Mischievous Islands*; a little island of four leagues in circumference, which has not yet been recognized.

Vesper Island, a low island, twelve leagues in circumference, discovered the same day as *Aurora Island*, and which is equally unknown at present.

The Labyrinth, a group of islands, to the number of six, of a charming appearance, which are together of about thirty leagues extent; they are twenty-five leagues to the westward of *Mischievous*. The Dutch narrative of the voyage makes no mention of the *Labyrinth*, but an inaccessible island, which it lays down in $15^{\circ} 17'$ south latitude. There is reason to believe, that these are the islands seen since by commodore Byron, and which he has named *Prince of Wales's Islands*).

Recreation,

Recreation, in $15^{\circ} 47'$ south latitude, according to the Dutch account, or $16^{\circ} 0'$ according to the French account; an inhabited island, twelve leagues in circumference, high above the sea, and covered with great trees: refreshments were found there. (It is laid down, in the chart, in longitude $155^{\circ} 20'$ west of Paris, by taking the medium of the differences of longitude between this island, Easter Island, and New Britain, or New Ireland, such as result from the chart which accompanies the Dutch edition of this voyage. This island has not yet been seen again).

Bauman's Islands, in $15^{\circ} 0'$ south latitude, according to the Dutch chart above mentioned, and $12^{\circ} 0'$ according to the French: these are numerous islands of ten, fifteen, and twenty leagues in circumference, and have excellent anchorages, and mild pacific inhabitants. (They are laid down, in the chart, in 15° of latitude, conformably to the Dutch chart, and nearly in longitude 173° west of Paris, from the difference of longitude that the same Dutch chart gives between these islands and New Britain).

Solitary Island, called Single Island in the English charts, in latitude $13^{\circ} 41'$ according to the Dutch account, and a day and a half's sail to the west from Bauman's Islands, or about thirty leagues. (It appears like two islands, and it might be conjectured to be the Islands of Cocoas and



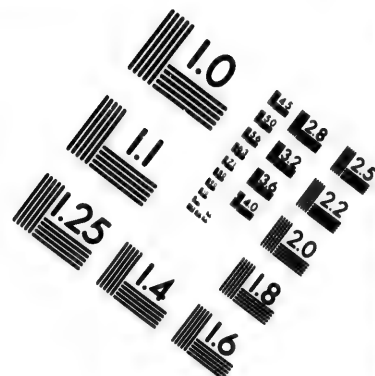
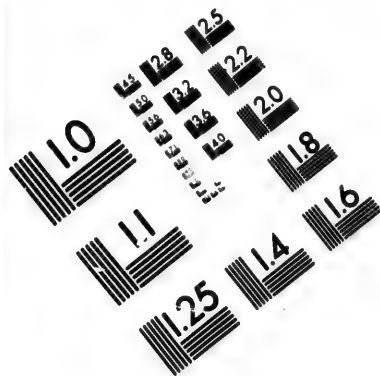
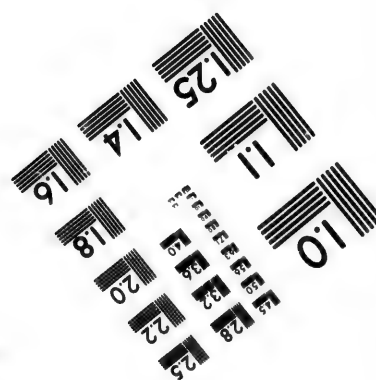
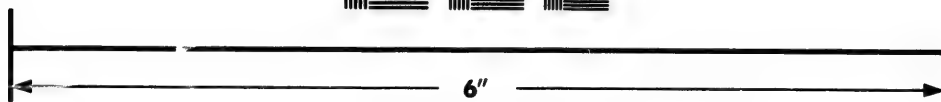
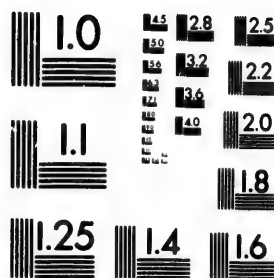


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Traitors of Le Maire and Schouten. But the difference of latitude forbids the adopting this opinion).

Tienhoven and *Groningen*, two considerable islands, seen some days after having quitted Single Island. *Tienhoven* was coasted along during an entire day without seeing its termination; it appeared to extend itself in a semi-circle towards *Groningen*. Neither the Dutch account nor its chart make mention of these two islands; and the French account, which speaks of them, points out neither their latitude, nor their distance from any other land, so that it is not possible to assign them any place in the chart.

29. *New Caledonia*. It does not appear, that the ancient navigators had any knowledge of this island. M. De La Pérouse is referred to the particulars given of it by capt. Cook, who discovered it in his second voyage. See his second voyage, vol. II, page 103, and following, of the original, and the chart which relates to his discovery.

30. *The Island of Santa Cruz*, an island discovered by him, in his second voyage, in 1595, or Egmont and Queen Charlotte's Islands, visited by Carteret in 1767. See the *Navigations aux Terres Australes* of the president de Broffes, vol. I, page 249, and following; Dalrymple's Historical Collection, vol. I, page 57, and following, and page 185; *Découvertes dans la Mer du Sud*;

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Hawkesworth's Collection, Carteret's Voyage, vol. I, page 568, and following.

31. *Tierra del Espiritu-Santo*, of Quiros, discovered in 1606, or Great Cyclades of Bougainville, in 1768, and New Hebrides of Cook, in 1774. See *Navigations aux Terres Australes*, by de Broffes, vol. I, page 306, and following; vol. II, page 243, and page 348 and following—An Historical Collection, by Dalrymple, vol. I, page 95, and following, and page 203, and page 1 of the Data---*Découvertes dans la Mer du Sud*, page 201, and following, and page 427---*Voyage de Bougainville*, page 242, and following;---Cook's second voyage, vol. II, page 23, and following, of the original, and the chart of the New Hebrides, vol. II, page 25, *ibid.* All this part has been laid down on the chart of the Great Equatorial Ocean, from the journal and observations of captain Cook.

32. *Terre des Arfacides*, discovered by Surville in 1769.

Surville* had the first sight of this land the 7th of October, 1769; it appeared to him very high and woody. At the time of the discovery the latitude of the ship was $6^{\circ} 57'$ south, and its longitude by account $152^{\circ} 28'$ east of Paris: but this longitude, corrected by that of New Zealand, determined by captain Cook, where Surville

* Extracted from the manuscript journal of M. De Surville.

touched,

touched, ought to be $153^{\circ} 45'$ at the place of his land-fall, which is a few leagues only, north-west of his Port Praslin.

He sailed along the coast in the direction of east-south-east, and found a harbour formed by an assemblage of islands, where he anchored, to which he gave the name of *Port Praslin*. In his way to this harbour, after he had discovered land, he met with a great number of little islands, which appeared, at first sight, to make part of the continent, but he found them afterwards to be little islands at three leagues distance from the main land*; Friday, the 13th, he anchored in Port Praslin, of which he has given a plan†: the islands which form it were covered with trees, and at high water were partly inundated.

The natives of the country shewed great distrust; and after having given the French to understand, by signs, that water might be had at a certain place, which they pointed out at the bottom of the harbour, they drew them thither that they might fall into an ambuscade. A brisk engagement ensued, when Surville's people re-embarked

* The different views of these coasts, such as they were taken from the ship's deck, and the complete Journal of Surville, may be seen in the *Découvertes des Français en 1768 et 1769, dans le Sud-Est de la Nouvelle Guinée, &c.* Paris, imprimerie royale, 1790.

† Ibid.

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In their boats, many of them being wounded, and thirty or forty of the savages killed.

The people who inhabit these countries are in general of the negro species; they have woolly black hair, flat noses, and thick lips. They powder their heads with lime, which, without doubt, burns their hair, and makes it appear red. The custom of thus powdering themselves has been remarked, by M. de Bougainville, of the people who inhabit Baie de Choiseul, on the north-western part of this continent. They have bracelets of shells for ornaments, and they wear intire shells round their necks, and girdles of human teeth (without doubt those of their enemies whom they have made prisoners of war); the greater part have a large hole bored in their ears, and through the cartilage of the nose, from which are suspended bunches of flowers. Their weapons are lances from eight to nine feet in length, clubs, or bludgeons, of the same materials, bows and reed arrows of forty or forty-four inches in length, the points of which are tipped with a sharp bone; they carry a shield made of rushes and the bark of a tree, two or three feet long and one broad. Their canoes are very light, and are from fifteen, or twenty-five, to sixty-five feet in length. The seams are covered with a kind of cement, which renders them impenetrable to the water.

Surville could obtain no supplies from these
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people. He only got possession of a young savage, of thirteen or fourteen years old, whom he designed to make use of as an interpreter, in the prosecution of his discoveries.

He left Port Praslin the twenty-first of October, and continued to stretch along the land towards the east-south-east, and afterwards towards the south-east. In many places he lost sight of the coast, and could perceive no land in these intervals; he thence concludes, with reason, that the chasms, or openings, are bays, very deep gulfs, or channels, which, dividing the land into many islands, form an archipelago. In his way many canoes came off from the shore, and went on board him. He made numerous presents to the savages, but every where observed marks of the greatest distrust. These people are great thieves, like all the inhabitants in the islands of the Great Equatorial Ocean.

Surville observed, that the young Indian, whom he had brought from Port Praslin, could not make himself understood by the inhabitants of the coast, and that he was in great fear of them, a circumstance which induced Surville to believe that this land was of great extent, and that the people of the different islands in this archipelago have no communication with each other but to make war.

When he had reached the island, which he called

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called *De La Contrariété*, situate about 4 degrees and half to the eastward, and 2 degrees to the southward of Port Praslin, he found a people resembling those of that harbour; robust men, entirely naked, of the height of five feet and five feet and a half (French) having woolly hair, and powdering it with lime, wearing the same ornaments, and using the same arms. These went on board his ships with the greatest boldness, accepted all that was given them, and endeavoured to steal that which was not given them. The country in this part wore a pleasing aspect; the odour of the aromatic plants, which reached the very ships, occasioned Surville to regret, that he could not land in a gulf, which he supposed to exist to the westward of the islands, which he called *The Three Sisters*.

When he had arrived at $11^{\circ} 7'$ south latitude, and 159° to the east of Paris, he perceived a large cape, with two little islands before it; and from this point he saw the land stretching away to the west and south-west. As he perceived no other beyond this cape, and was in haste to get a clear offing, he called the islands, which he saw, *Isles de la Délivrance*, and the cape, *Cap Oriental des Arfacides*. The 8th of November he lost all sight of the land.

Such is the epitome of Surville's Discovery, to which is connected land seen by Bougainville, which is the north-west part of the *Terre des Arfacides*.

Arfacides. See his voyage, page 264, and following.

It will be proper also to consult the account that Figueroa has given * us of Mendana's Discoveries, in his first voyage, in 1567. There is every reason to believe, after numerous combinations and comparisons, that *Solomon's Islands*, discovered at that period by Mendana, are the same which have been since found by Surville, in 1769.

M. De La Pérouse, in the collection of manuscript charts, committed to his care and use, will find one relating to the modern discoveries in this part, upon which the discoveries of Mendana have been endeavoured to be represented, as well as they could be laid down, after the descriptions given by Figueroa, Herrera, and other Spanish historians, who do not agree upon the particular extent of the different islands, or on their relative positions; but it was sufficient to shew the presumed identity of the discoveries of Mendana and of those of Surville; and it is certain, that the researches which M. De La Pérouse is expected to make will establish that which is here only presented as a probability.

* See *Echos de D. Garcia Hurtado de Mendoza, quarto Marquez de Cannete*, by Christoval Suarez de Figueroa; Madrid, 1613---*Historical Collection*, by Dalrymple, vol. I, page 176---*Découvertes dans la Mer du Sud*, translated from the English by Freville, page 89.

33. *Terres De La Louisiade*, discovered, in 1768, by M. de Bougainville.

These lands were unknown before this period. There was only an imperfect and confused relation of a discovery, in 1705, of the northern coast by the Dutch yacht, the *Geelvinck*.

For *Louisiade*, see Voyage de M. De Bougainville, page 255, and following: and for the journal of the *Geelvinck** the *Navigations Australes*, of the president de Brosles, vol. II, page 444.

34. *Endeavour Straits*, between New Holland and New Guinea.

See Hawkesworth's Collection of Voyages round the World, vol. III, p. 610, and following (Cook's first Voyage).

It appears that Torrez, who commanded one of the ships of Quiros's fleet, in 1606, is the first navigator who passed between New Holland and New Guinea.

See the relation of Quiros's voyages in the authors cited in these notes.

35. North and west coasts of New Holland.

There is nothing to be offered, which can be

* It is now proved, that the position first given to *Geelvinck's Land* is not the true one. See *Découvertes des Français en 1768 et 1769, dans le sud est de la nouvelle Guinée*, page xiv of the preface, (Fr. Ed.)

deemed authentic, or sufficiently detailed, concerning this part of the greatest island in the world.

M. De La Pérouse is referred to the *Voyages de Dampier*, for the northern coast, some parts of which this exact navigator has reconnoitred; and to *Navigations aux Terres Australes*, by the president de Broffes, vol. II, page 438, for the north and western coast, and vol. I, page 426, and following, for the discoveries of the Dutch in New Holland.

There is added to the collection of manuscript charts, put into M. De La Pérouse's hands, a copy of that which is referred to by the president de Broffes, and which contains the examinations and discoveries the Dutch made of part of the western coast. The soundings too are added, and particulars extracted from the journals of the English navigators, who have been there more recently.

36. *South of Van Diemens Land*, a part of the south of New Holland.

See, in the history of captain Cook's second voyage, what has been said by captain Furneaux, who was there in the month of February, 1773, (vol. I, page 107, and following, of the original).

See also captain Cook's third voyage, vol. I, page 91 of the original.

37. *Island of New Zealand*. This land was discovered, in 1642, by Abel Tasman, a Dutchman: but as the details which he has given are in no
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respect circumstantial, it would be useless to repeat them, and Captain Cook's voyages leave nothing wanting on this head: See Hawkesworth's Collection, vol. II, page 281, and following, of the original (Cook's Voyage); Captain Cook's second voyage, vol. I, page 69 of the original, *ibid*, page 225, and following, vol. II, page 146, and following; Cook's third voyage, vol. I, page 118, and following, of the original.

In these works are to be found, independently of descriptions and astronomical and nautical observations, all the charts and particular plans which have been constructed by the English navigators.

38. *Marquis of Mendoza's Islands*, discovered, in 1595, by Alvar Mendana, a Spaniard: See in note 28 Mendana's second voyage.

These islands were again discovered in 1774, by captain Cook, and nothing better can be done, than to refer to his account for all that concerns their description and their geographical position. (Cook's second voyage, vol. I, page 297, and following, of the original).

39. *Isles of Nublada, Rocca-Partida*, and others, on the east-south-east of Sandwich Islands.

It is believed that Juan Gaetano, a Spaniard, is the first navigator, who had a knowledge of these islands, in 1542.

He left Porto-Santo, near Port Nativity, on the coast of Mexico, about 20° of north latitude.

He discovered successively the islands Nublada, Rocca-Partida, and 200 leagues westward of this last, a bank, in 13 or 14 degrees north latitude, upon which he found but seven fathoms water. Continuing his course to the westward, he met with some other islands lying to the west of the Sandwich Isles. (*Raccolte di Navigazioni e Viaggi da Ramusio*, vol. I, page 375).

The islands discovered by Gaetano have been laid down on the chart of the Great Equatorial Ocean, with which M. De La Pérouse is furnished, according to that of Anson's voyage, which Anson had copied from one he found on board the Manilla galleon when he captured it.

40. *Sandwich Islands*, discovered by captain Cook, in his third voyage, in 1778.

Although the courses of the Spanish galleons would readily enable these vessels to examine islands situate between the 19th and 20th north parallels, yet it does not appear, that, in any period, the Spaniards have had a knowledge of them. They offer an excellent port for their ships, which trade from Asia to America over the Great Equatorial Ocean; and it is not likely, that they would have neglected forming an establishment

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on islands so advantageously situated for communication between the two continents. We owe all the particulars that we possess concerning these islands to captain Cook and captain King. See Cook's third voyage, vol. II, page 190, and following, 525 and following, and page the 1st, and following, of the 3d vol. in the original.

GREAT NORTHERN OCEAN.

41. *North west coast of America, from Port Monterey, situate in about 36° 42' of north latitude, to the Aleutian Isles.*

In 1769 and 1770 the Spaniards ordered Port Monterey to be examined, as well as that of San Diego, which is more to the southward; they raised little forts there, and formed a kind of establishment, fearing that some foreign power might extend its views to coasts which, though in the neighbourhood of the possessions of the Crown of Spain, appeared not to belong to it.

The expedition was ordered by the marquis de Croix, viceroy of New Spain, prepared by Don Joseph de Galvez, intendant of the army, visitor general of the kingdom, and executed by Gaspar de Portola, captain of dragoons, commander of the troops, and by the packet-boats the San-Carlos and the San-Antonio, commanded by Don Vicente

Vicente Vila, pilot of the royal navy, and Don Juan Perez, pilot for the navigation of the Philippines.

The journal of this voyage has been printed in Spanish, at the printing-office of the government of New Spain.

It is said in this work, that the constancy of the north and north-west winds, which predominate to the northward of California almost all the year, opposes great difficulties to all ships which would run to the north-west coasts of America.

The country to the north of the peninsula of California is, from the same authority, tolerably fertile, and the natives very tractable.

The Spaniards spent more than a year in finding again the port of Monterey, though they ought to have been well acquainted with its position, since it had been discovered, in 1602, by the general Viscaino, commandant of a squadron, which Philip the Third ordered to be fitted out for the discovery and reconnoitring of the coasts to the north of California. After great fatigues, and long researches by sea and by land, they succeeded at length in discovering it anew in 1770, nearly in the parallel that Viscaino had pointed out in the relation of his discoveries.

According to the observations made by the Spaniards in 1770, the Port of Monterey is situ-

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ate in latitude $36^{\circ} 40' *$, immediately to the northward of the chain of mountains, (or Sierra) of Santa-Lucia.

It is a vast bay, much resembling that of Cadiz, with anchorage in four, six, or eight fathom water, according as the anchor is let go nearer to or farther from the shore: it is good holding ground, fine sand. An interval of some years elapsed without any prosecution of these northern discoveries by Spain. The entrance and the successive runs of numerous English ships in the Great Ocean, at length roused its attention; and in 1775, the viceroy of Mexico, Don Antonio Maria Bucarelli, ordered an armament to proceed in the inspection of the north-west coasts of America, as far as 65° .

Three small ships were employed in this enterprize, which was entrusted to Don Juan de Ayala. The Hon. Daines Barrington translated into English the journal of Francisco Antonio Maurelle, pilot of the second ship, commanded by Don. J. F. De La Bodega, and has printed it in his Miscellanies (London, 1781, in 4to.) It is from the translation of Mr. Barrington, that the following abstract of the voyage of the Spaniards is taken.

* In the voyage that the Spaniards made, in 1775, to the northern coast of California, which is related hereafter, they fixed the latitude of the Port of Monterey at $36^{\circ} 44'$ north.

They

They failed from San Blas* the 17th of March, 1775, meeting with contrary winds during the first part of their voyage; and the 21st of May, after a consultation of all the officers, it was decided, that they should ascend as high as the 43d degree of latitude, rather than put into the Port of Monterey. This decision was founded upon the hope of finding at this height the entrance of Martin d'Aguilar†, discovered in 1603, where water might be had, and the ships refitted. (In some charts this entrance is laid down in 45 degrees).

The 7th of June, in latitude $41^{\circ} 30'$, although still at a considerable distance from land, they distinguished a long range of coast, which extended from the south-west to the north-east; a calm prevented them from getting near it.

The 8th, they perceived the land much more distinctly at nine leagues distance; the currents, according to their observation, had carried them to the southward twenty-nine minutes in twenty-four hours,

The 9th they entered a harbour, which they called *Trinidad*, situate in $41^{\circ} 7'$ ob-

* On the coast of New Gallicia, a province of Mexico, at the entrance of the Vermillion Sea.

† M. De La Pérouse will find in the *Considérations géographiques & physiques* of Philip Buache, all the information that can be had relative to this entrance of Aguilar, and to that of Fuca, mention of which is made in this journal.

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served latitude, and $19^{\circ} 4'$ to the westward of San Blas.

The Spaniards speak highly of the country, and its inhabitants. These Americans paint their bodies black and blue, and they have nearly the same customs, and use the same weapons as those whose description is found in the account of the third voyage of captain Cook, when he visited the north-west coast of America. We are not in possession of any chart of this harbour, but the journal informs us, that it was drawn by Don Bruno Heceta, J. F. De La Bodega, and F. Antonio Maurelle, the author of the narrative. It is there said, that although the harbour is represented as open, yet it is to be understood, that it is sheltered on the south-west, as well as on the north-north-east, and east.

On the western part is a hill, fifty fathoms in height, contiguous to the northern coast, on which is situate another of twenty fathoms, each of them offering a safe shelter, not only against the winds, but even against an enemy.

At the entrance of the harbour is a little island of considerable height, quite barren; and the two sides of the coast are skirted with high rocks, which offer an easy landing, vessels being able to go so near them, that a communication may be formed with the land by a ladder. Near the flat part of the shore are several smaller rocks, which

which shelter a vessel at anchor from the south-east and south-west winds.

The tides are as regular there as in the seas and on the coasts of Europe.

The Spaniards, during their stay, tried to go in a boat up a river, which runs from the north-east to the south-west, and which they had discovered from the summit of a mountain: they found that the mouth was larger than necessary for the discharge of its own waters, which lost themselves in the sand on the shore; being, however, unable to ascend it at low water, they traced its banks on foot for the space of a league, and found it to be in most places twenty feet in breadth, and five in depth. They denominated it *Rio de las Tortolas* (the River of Turtle Doves*) because on their arrival they perceived a great many of these, as well as of other birds.

They found some plants and fruits upon the skirts of the mountains, and in the vicinity of the harbour.

They quitted the port of Trinidad, the 19th of June, with a north-west wind, which had prevailed during their whole stay at the place.

It appears, that Don Juan Perez†, one of the officers of the squadron, had already been employed in
some

* Mr. Barrington translates it *Pigeon's River*.

† This Don Juan Perez is, without doubt, the pilot of the Philippines, employed in the expedition undertaken in 1769,
but

some discoveries to the northward, of which no information is given; for, whether he were actually on board the fleet, as may be concluded from some circumstances of the narrative, or whether they were only possessed of his journal, it is evident, that his advice is cited with marks of great deference. He represented, that there had been winds from the south and south-east, which had enabled him, and without much difficulty, to keep along the coast to the high latitudes. His opinion was, that it ought not to be approached before arriving at the 49th degree, and Don Mau-
relle, author of the relation from which this extract is made, was of his opinion.

The 9th of July, the Spaniards judged themselves to be in latitude $47^{\circ} 40'$, and according to the French charts, which they found very defective in this part from a want of authentic materials, in the latitude of an entrance, or river, said to have been discovered by Juan de Fuca, in 1592. They perceived that the sea was coloured as it usually is within soundings of a coast: they saw at the same time a great many red fishes, twenty feet in length, and sea oranges (a species of marine plant). Every thing inclined them to believe they were not far from land.

but the Spaniards did not then push their inquiries so far to the northward as in this of 1775. It would appear, that Mr. Barrington had no knowledge of the expedition of 1769.

The

The 11th they got sight of it at twelve leagues distance.

The 12th at night they were only a league from it. They distinguished numerous little isles and mountains covered with snow; they saw also a barren little island of only half a league in circuit, which they named *Island of Dolores*. In this position they estimated their latitude at $47^{\circ} 39'$, longitude $21^{\circ} 53'$ west from the meridian of San Blas.

The 13th they anchored on the coast in 30 fathoms water, two leagues and a half from the land, to wait for one of the ships which had fallen astern, lat. $47^{\circ} 28'$, and $21^{\circ} 34'$ to the west of San Blas.

They set sail again in the evening; and when the squadron was collected together they anchored again in eight fathom, lat. $47^{\circ} 21'$, and long. $21^{\circ} 19'$ west of the meridian from which they set out.

The natives of the country appeared in great numbers in their canoes, and even went aboard the Spanish ships. They were presented, in exchange for the skins that they brought, with articles of copper and bits of this metal, on which they appeared to set the greatest value; they expressed their desire for these, by pointing to the googings of the rudder.

The Spaniards were desirous of going ashore for wood and water, but the Americans, who had

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placed themselves in ambuscade, wounded many among them; and on the side of the natives a considerable number were killed.

The Spaniards again put to sea, the winds continuing to blow from the north-west and north.

On the first of August came on a thick fog, they therefore stood off from the coast.

On the fifth, winds from the south-east.

On the 13th, a change in the colour of the sea; vast numbers of sea oranges, and many birds.

The signs of land became more numerous on the 14th and 15th: they then reckoned themselves in latitude $56^{\circ} 8'$, 154 leagues* westward of the continent, and only sixty leagues from an island, which was laid down (says the journal) upon their chart, and which Maurelle represents as the projecting point of an archipelago, situate upon the same parallel. It appears, that the chart in question is that of Don Juan Perez †, who had already, as has been said, made a voyage to the north, but there is nothing further known of this

* Of 17 and a half to a degree.

† It seems that Don Juan Perez could not possibly have any practical knowledge of the country or seas to the north; for, in the expedition of 1769, in which he was employed, the Spaniards had ascended only to Monterey, situate in lat. $36^{\circ} 40'$ or $44'$.

island. It is not said in the journal whether it were to the eastward or to the westward of the ship. It is, however, very probable, that Mautelle spoke of some island bordering on the peninsula of Alaska, such as Cook's Trinity Island, and that he considered Alaska, and all the islands which are in its neighbourhood, as forming an archipelago. This appeared to be the opinion of the Russians before the discoveries of Cook threw light upon that part of America.

The 16th, at noon, the Spaniards discovered land in the north-west; and a little time after, it appeared open to the north-east, and presented to the view several capes and mountains, among which was one, eminently overtopping all the others: it is (says the author of the journal) of an immense height, its summit inclines considerably on one side, and its form is the most beautiful and most regular that was ever beheld; it is insulated, being detached from a chain of other mountains. The summit was at the time covered with snow; below were several large bare spaces, which extended to the middle of its sides, and from this height, to its base, the surface was covered with trees of the same kinds as those which had been seen at Trinity Harbour.

The Spaniards gave the name of *San Jacinto* (Saint Hyacinth) to this island; and the cape, which terminates it on the side next to the sea, was

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called *Del Enganno*, (Cape Deceit). The journal places the mountain and the cape in latitude $57^{\circ} 2'$, and the author adds that, by two observations repeated at the distance of a mile, it was concluded that they were $34^{\circ} 12'$ west of the meridian of San Blas; but he leaves every thing in the dark as to the means made use of for ascertaining the longitude. It is, however, from the position of this cape, that all the other points of the coast, as mentioned, have been laid down upon the chart of the voyage which accompanies the journal. (Mr. Barrington, who obtained a copy of the journal, and translated it, could not procure the chart).

The 17th of August a faint breeze from the south allowed the Spaniards to enter a bay in latitude $57^{\circ} 11'$, and $34^{\circ} 12'$ west of San Blas. This bay is three leagues wide at its entrance, and is protected on the south side by Cape del Enganno. Upon the coast opposite to this cape, they discovered a harbour, the mouth of which was more than a league across, sheltered from all except southerly winds. They surveyed the whole curve of the bay, at a little distance from the coast, and never found less than fifty fathoms water; but the mountains running to the very edges, they could discover no beach proper to land at. They distinguished nevertheless a small river, but as it was night, could not get nearer to inspect it, they

therefore let go the anchor in sixty-six fathom water, clayey bottom.

They called this bay *De Guadalupa*.

When they were getting under way on the 18th, they saw two canoes, each containing four Americans, two men, and two women, who appeared unwilling to approach near the ships, but made signs to the Spaniards to go on shore.—The navigators continued sailing along the coast with a wind to the north-west till nine o'clock in the morning, when they entered another harbour not so large as the former, but the environs of which appeared to offer more resources to navigators: a stream eight or ten feet wide empties itself into it; and a continued chain of lofty islands very near each other protects it from almost every wind. They anchored there in eighteen fathom water, sandy bottom, about pistol shot from the shore; they saw upon the bank of the river a high building, and a wooden parapet, supported by stakes driven into the ground; they distinguished ten Indians there, besides women and children.

They called this harbour *De Los Remedios* (Remedies) and found it to be situate in lat. $57^{\circ} 18'$, and $34^{\circ} 12'$ west of the meridian of San Blas.

They erected a cross on the shore, and cut another in the rock, and performed the ceremony
of

of taking possession of the country, conformably to their instructions.

They then made choice of, and marked out, a place for taking in wood and water.

During all this time the Americans did not quit their parapet; but as soon as the Spaniards had retired, the Indians tore down the cross which had been set up, and planted it in the same manner before their house, and made signs, by opening and extending their arms, that they had taken possession of that symbol.

The 19th, the Spaniards having gone on shore to take in wood and water, the Americans shewed themselves on the other side of the river; they were unarmed, and carried a white leaf at the end of a pole. The Spaniards made signs to them, that they were only come to take in water: upon which the chief of the Indians, judging the signs implied, that they were thirsty, advanced into the middle of the brook, holding in his hand a cup filled with water, as also some dried fish, which were received by a Spaniard, and presented by him to their commander, who in return sent to the Americans some glass beads and bits of cloth. They signified that these presents did not please them; but insisted, by signs, that others should be sent to them, when, upon the refusal of the Spaniards, they menaced them with long lances, armed at the point with sharpened stones;

The Spaniards contented themselves with remaining on their guard; and when the Indians found they had no mind to attack them, they retired.

Wood and water so much wanted were procured.

The mouth of the river affords a very ample supply of fish; the country is covered with firs, as at Port Trinity; the inhabitants are clothed in the same manner, and like them wear a bonnet over their hair which covers the whole head. The Spaniards judged from many particulars, that the savages of this country have a sort of civilization.

The cold was excessive, the rain abundant, and the fogs very thick. They never perceived the sun during the three days that they passed in the harbour of Los Remedios.

They quitted it the 21st of August, and stood to the northward, with the wind from the south-east.

The 22d, latitude $57^{\circ} 18'$.

They ran into the 58th degree of latitude in visiting this coast, where they made no discovery; and they concluded that all the straits, or supposed entrances, had no existence. Sicknefs had made considerable ravages among the crews for some time, and as its fatal effects augmented every day, they deemed it impossible to push their inquiries to a higher latitude, but giving up the enterprize, they made sail to the south-east.

The 24th August, being in latitude $57^{\circ} 17'$, they doubled a cape, and entered into a great bay,

bay, where they discovered an arm of the sea to the northward : they experienced very troublesome cold weather ; but the sea was quite smooth, and the ships in perfect safety from any wind.

The anchorage is good, and the fresh water abundant, either from the lakes or the rivers, affording plenty of fish. They had the bay examined by means of one of the schooners, and they dropped their anchor at the entrance of the arm of the sea, in 20 fathom water, in a bottom of soft mud. This harbour was called *Bucarelli*, after the name of the viceroy of Mexico : a milder climate was experienced here than in latitudes not so high ; and this difference was imputed to the volcanoes which are found in the neighbourhood of this harbour, and the fires of which are perceived in the night, though at a very considerable distance.

The Spaniards took possession of the country in the name of his Catholic Majesty, and they provided themselves with water and wood.

They imagined, from the ruins of a hut, and by other marks, that the country was inhabited, but they saw not one inhabitant.

By two observations made on different days, they fixed the latitude of *Bucarelli* at $55^{\circ} 17'$, and its longitude at $32^{\circ} 9'$ west of the meridian of San Blas.

The mountains in the environs of this harbour are covered with trees of the same species

as those which are found in the less northerly parts of this coast.

At the distance of six leagues was perceived an island of a moderate height, which they called *San Carlos*.

They set sail again on the 29th, with the wind at north, blowing pretty fresh, but at noon a calm succeeded, and they found themselves abreast of a very low and barren island; it is skirted with rocks to the east and west. They anchored in 22 fathoms water, and about two leagues distance from the Island of San Carlos.

In this position, a cape was discovered at the distance of four or five leagues, which was called *Cape Saint Augustin*.

In going from this cape, the coast stretches to the east as far as the eye can reach it.

The force of these two currents, which in this place run in opposite directions, was so violent, that it was not possible to found: and as these currents appeared to follow and depend on the tides, it was concluded that the opening perceived in the land might be a river, or that at least this entrance had no communication but with the Great Northern Ocean.

Cape Saint Augustin is situated in about 55° latitude.

As the season was not yet advanced, the zeal of the Spaniards began to revive; and with the
view

view of fulfilling the intentions of his Catholic Majesty expressed in their instructions, they determined to attempt to get again to the northward.

The 28th of August, the wind was variable, they availed themselves of it to approach the coast, and they found there, as they expected, the winds from the south-west.

The 29th and 30th, wind south, veering towards the south-west, in sudden and violent squalls, sea running high, till the first of September; they were carried, during this interval, as far as latitude $56^{\circ} 50'$.

In the beginning of September the winds were variable; but the 6th they settled in the south-west, and blew a violent storm. The 7th, the wind having shifted to the north, they stood in for the land again, in latitude 55° deg.; the crews were worn out with fatigue, and scarcely could they find one man, in either of the vessels, able to assist in working the ship with the officers, who were obliged to supply the want of sailors: every idea of prosecuting the discoveries to the northward was now abandoned.

The 11th, in latitude $53^{\circ} 54'$, land was seen at eight or nine leagues distance: they kept a sufficient offing to be in no danger of getting embayed, and yet near enough not to lose sight of it; but it was impossible to make any observation on the coasts. It was only in latitude $47^{\circ} 3'$, that, sailing at the distance of a mile from the land, the capes, the creeks, and other remarkable points could be distinguished in such a manner

as to be laid down upon the chart they were constructing.

The 20th, they were half a league from the coast, precisely in the same situation they had been in, the 13th of July preceding, but it was discovered that there was a difference of seventeen leagues (Spanish) between the longitudes, by account of these two periods of time.

The 22d, with the wind at north-west, they directed their course to fetch Port Monterey.

The 24th, land was seen in latitude $45^{\circ} 27'$, and they coasted it within cannon shot. They lay to during the night, because they reckoned themselves in the supposed latitude of the entrance of Martin d'Aguilar, the existence and position of which they wished to verify. This research was continued as far as the parallel of $45^{\circ} 50'$, and $20' 4'$ to the west of San Blas. Arrived at this latitude and longitude, a cape was discovered resembling a round table, which they called *Cape Mezari*, beyond which the coast runs away to the south-west. Ten small islands were perceived, and some islets almost level with the water, whence it may be concluded, that, if the entrance or river of Martin d'Aguilar existed in this part, it could not have escaped a research made so near to the coast: the author of the journal agrees, however, that d'Aguilar had pointed out the latitude of 43 degrees for the entrance of his river; but he

observes

observes, that the instruments of which this ancient navigator must have made use, in 1603, could not but be very defective, and that he ought not to rely upon the Latitude he assigned to the entrance. It may be supposed, adds he, that d'Aguilar has pointed out too northerly a latitude, and that we might have found his river, at 42° , or below; yet, it is scarcely to be hoped, since, except fifty minutes or thereabouts, this part of the coast has been visited.

The Spaniards, in returning to Monterey, again sought for the harbour of San Francisco, and having found it in latitude $38^{\circ} 18'$, they entered a bay sheltered from the north and south-west, whence they distinguished the mouth of a great river, and, a little higher, a large harbour of which the form was that of a basin. They judged that this might be the harbour of San Francisco, which the *Histoire De La Californie* places in $38^{\circ} 4'$; but the roughness of the sea did not allow them to enter it: they doubted, however, on examining it nearer, whether it were Port San Francisco, because they saw no inhabitants, and did not perceive the little islands described to be opposite to it. In this state of uncertainty they let go the anchor near one of the two points, or capes, which form the entrance of the harbour, and they called that point near which

which they anchored, and which is the northern, most, *Punta De Arenas*, (Sandy Point.)

The natives of the country soon presented themselves on both sides of the harbour, and rowed from one side to the other in their canoes; two of these canoes left the rest, and came along side the ships; those who went on board carried with them, and offered plumes of feathers, in the form of aigrettes, and garlands, and a box filled with seeds, resembling nuts in taste, which they exchanged for glass beads, looking glasses, and scraps of cloth.

These Indians are tall and strong: their colour is that of all the people on this coast. Their proceedings had an air of generosity; for they appeared not to expect any return for the presents they made, and this was a conduct which the Spaniards had not before met with among any of the tribes they had had an opportunity of visiting.

Sickness had made too great a progress among the crews, to allow them to stay and minutely examine the harbour, and to take its soundings; and as they could not persuade themselves that it was the harbour of San Francisco, it was named Port De La Bodega.

It is certain, that this harbour is the same that Drake had discovered on the 17th of June, 1579,
the

the latitude of which he fixed at $38^{\circ} 30'$. The account he gives of the inhabitants agrees with the recent report of the Spaniards. These fix the latitude of their Port De La Bodega at $38^{\circ} 18'$, and its longitude at $18^{\circ} 4'$ to the west of San Blas.

The latitude pointed out by Drake differs only in $12'$ from that of the Spaniards; and for the time when he observed, and the instruments which he made use of, it may be considered as exact. Mr. Barrington, with reason, reproaches the Spaniards for not having preserved to this harbour the name of the *brave heretic* who first discovered the coasts of the north-west part of America, of which he had taken possession in behalf of the crown of England, and to which he had given the name of *New Albion*.

The 4th of October, the Spaniards quitted the port of Sir Francis Drake, with the first of the flood, the direction of which was contrary to the current of the river. These two powers acting opposite ways, the waves, driven up on both sides, rose to such a height, that they entirely covered the ship, and stove the boat to pieces, which was lashed alongside. The entrance of this harbour is not deep enough for a ship at anchor to resist the impulse and the swell of the sea, when the tide and the current of the river are in opposition. The author of the journal

nal says, that, if they had been previously informed as to these circumstances, either they would have kept their first anchorage, or have taken another further from the entrance of the haven. In every part they sounded, they found an equal depth. Don Maurelle affirms, that it is easy to get into the harbour with north-westerly winds, which predominate upon this coast; but he thinks, that it would be necessary for any one wishing to go out with the same winds, to anchor at a greater distance from the points; and he adds, that this precaution would be superfluous when the winds are settled at south-west, east, or south.

The mountains bordering on the sea are absolutely barren; but those of the interior appear to be covered with trees: the plains exhibit verdure, and seem to invite cultivation. The account published by Drake says, that he called this country New Albion for two reasons; the first, because by the nature of the banks and white rocks, which edge the coast, it presents the same aspect as England: the second, because it was just and reasonable, that this land should bear the name of the country of the first navigator who had discovered it.

The Spaniards, as it has been said, quitted Drake's Harbour, the 4th of October, and after having doubled the cape, which they called

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Del Cordon, and which forms the entrance of the harbour with that of *Las Arenas*, they made sail to the south-south-west, with a moderate wind. They steered afterwards to the west, to make a cape, which was seen to the southward, at the distance of about five leagues.

The 5th, they sailed near the little islands which are situate to the west, and abreast of the harbour they had just quitted.

The 7th, they anchored in Port Monterey, in three fathoms water, sandy bottom. They determined its latitude to be $36^{\circ} 44'$, and longitude 17° deg. to the west of San Blas.

The first of November they left this port.

The fourth, at noon, with a fair wind at north-west, they continued their course to the southward, until the 13th of the same month, when they had sight of the coast of California; and they followed it as far as Cape S. Lucar, which they doubled the 16th at six o'clock in the evening.

They supposed this cape to be in latitude $22^{\circ} 49'$, and 5° deg. to the west of the meridian of San Blas.

The same day, the 16th, they got sight of the Islands *Trois-Maries*, and, the 20th at night,

* The pilots employed in the expedition of 1769—70 determined this latitude to be $36^{\circ} 40'$.

they

they re-entered the port of San Blas, whence they had departed 260 days before.

In order to trace the north-west coast of America, upon the chart of the Great Boreal Ocean, with which M. De La Pérouse is furnished, it has been a rule to regulate the geographical positions given by the Spaniards, by combining them with those of captain Cook; which have served to rectify the former in those parts not within reach of being visited, and of which the Spaniards had but a transient view. To the chart of the Great Equatorial Ocean are added particular charts of certain portions of coasts, and plans of harbours and bays, different, in many respects, from those which have been given, for the same parts, in the relation of captain Cook's third voyage. M. De La Pérouse may have an opportunity of ascertaining which of these plans are drawn in the most accurate manner. There is no certainty yet, whether that portion of America, which extends itself in a projecting point towards the south-west, be an island, or a peninsula. The Russian charts, that of Stæhlin in particular*, represents all the lands, comprised under the name of Alashka, as a great island, separated from the continent by a chan-

* An Account of the new northern Archipelago, lately discovered by the Russians, in the Seas of Kamtschatka, and Anadir, &c. London, 1774, in octavo.

nel forty leagues wide, with many smaller islands to the north and north-east of Alashka. Captain Cook has visited the coast, sufficiently near in those parts which he has reconnoitred to be certain that it is not interrupted, or divided by channels, and that the continent stretches itself, at least, to the vicinity of the island of Shumagin. But he suspects the existence of a strait to the north-north-west of the island Hattibut, which would separate the Peninsula of Alashka from another portion of land situate in the south-west, and designated upon the chart under the name of the *Island of Oonemak*.

M. De La Pérouse is referred to *Captain Cook's Third Voyage*, (vol. II, pages 403, and 488, of the original), and to the charts that are joined to it, as well as to those which make a part of the manuscript collection.

42. *Aleutian*, or *Fox Islands*, and other islands which are supposed to be situate to the west, west-south-west, and west-north-west of them.

Captain Cook has only visited the islands of Oonalashka, (part of the Fox Islands), and the strait between these islands, with a few of the harbours which belong to them. With regard to the other islands of this cluster, and of those of other clusters, situate more to the westward,

we have no knowledge but by the accounts of the Russians, and they are too inexact to deserve any confidence.

M. De La Pérouse ought to regard them only as a nomenclature, and to look after these islands with the same precaution, as if they were absolutely unknown. He will find all these accounts collected in the work of Mr. Coxe, the title of which is, "Discoveries of the Russians;" and in the chart joined to this work, which gives all the discoveries of that nation to the eastward of Kamtschatka. See pages 149, 194, of the translation.

43. *The Harbour of Avatscha, or Saint Peter and Saint Paul*, at the extremity of the Peninsula of Kamtschatka.

To the collection of manuscript charts, delivered to M. De La Pérouse, is added, a particular plan of this port, upon a large scale, different from that which is found in captain Cook's third voyage, to which, however, he is referred for the nautical and other particulars which may be useful to him, when he touches at that port. See *Cook's Third Voyage*, vol. III, page 183, and following, page 284, and following.

44. *Kurile Islands.*

Captain Gore, who succeeded captains Cook, and Clerke, in the command, towards the end of the
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third voyage made by the English in the Great Northern Ocean, visited none of the Kurile Isles, and before which he passed, coasting along the east side of them.

If Muller may be believed*, it would appear that *Yesso*, or *Jesso*, is the name that the Japanese give to all the islands that the Russians designate under that of *Kuril'ski*, or *Kuriles*. The first of these islands, the most northerly, is but a short distance from the south point of Kamtschatka†: it is two or three hours row from one to the other; and it may be presumed, after the accounts given of them, that the islands nearest to Kamtschatka only are tributary to Russia; and that those which lie more to the southward are independent of it. Muller designates all these islands in the following order, commencing with the most northerly.

1. *Schumtschu*.
2. *Purumuschu*, at two or three hours distance from the first.
3. *Muschu*, or *Ouikutan*, half a days journey from the second.
4. *Ujachkupa*, westerly of the three former, and at some distance from the first.
5. *Sirinki*, over against the strait which separates the second from the third.

* *Voyages et Découvertes des Russes*.

† Called *Lopatka Point*.

6. *Kukumiwa*, a little uninhabited island to the south-west of the fifth.

7. *Araumakutan*, uninhabited, a volcano.

8. *Siafkutan*, a few inhabitants; but those of the neighbouring islands assemble there, for the purposes of traffic.

9. *Ikarma*, a little desert island, to the west of the eighth.

10. *Maschautsch*, a little desert island, to the south-west of the ninth.

11. *Igaitu*, another desert island, to the south-east of the eighth.

12. *Schokoki*, a days sail from the eighth.

13. *Motogo*, a little island to the south.

14. <i>Schaschowa</i> ,	} Ibid. N. B. Between these three islands the currents are very rapid, and the sea rises to a great height.
15. <i>Ushifschir</i> ,	
16. <i>Kitui</i> ,	

17. *Schimuschir*, inhabited.

18. *Tschirpui*, remarkable for a high mountain.

19. *Iturpu*, a large island, well peopled, covered with great forests: bears, and other species of animals are found there. It contains several anchorages and rivers, into which ships may retire for safety. It is believed, that the inhabitants of this island are independent of Russia, and acknowledge no other dominion.

20. *Urup*.

20. *Urup*. I am assured, says Muller, that the inhabitants of this island are independent.

21. *Kunafschir*. This island is the largest of all those which have been mentioned, and its population is great.

22. *Matmai*, or *Matsumai*, the last island, and the largest of all. The capital town of the same name, Matmai, is situate on the sea shore; on the south-west side; it was built and is inhabited by the Japanese: it is a fortified place, furnished with artillery, and defended by a numerous garrison.

The island of Matmai is the place of exile for persons of distinction at Japan: it is separated from that empire by only a narrow channel, but which is considered as dangerous, because the capes, which project on both sides, render the navigation difficult.

The English, in Cook's third voyage, have taken no notice but of the first and second of the Kuriles, yet they have collected, from the clergyman of Paratounka, particulars interesting in a considerable degree concerning these islands in general, and some of them especially.

It appears, that the domination of the Russians does not extend beyond the island of Utschischir, the fifteenth named, and that all those which follow it are independent. The people of

these islands pass for being sensible to friendship, hospitable, humane, and generous. See Cook's *Third Voyage*, vol. III, page 378, of the original. Consult also the *Considérations géographiques et physiques* of Philip Buache, page 55, and others.

45 *The Land of Yesso, or Jessō.* It has been shewn in the preceding note, that the Japanese confound this coast or land with the Kurile Islands; but it is generally believed, that it ought to be distinguished from them. Cook's voyage has thrown no light upon this matter; it even appears, that, to construct the general chart of his voyage in this part, the old known charts have only been copied,

For the Land of Jessō, may be consulted the various accounts collected by Philip Buache, who has inserted them in his *Considérations Géographiques & Physiques*, page 75, and following. See also the charts belonging to this work, and a series of views drawn by the Dutch, while they were examining a part of it, in 1643.

To the collection with which M. De La Pérouse is furnished, is added the copy of the chart drawn by the Dutch, which details all the particulars of their discoveries.

46. *The eastern coast of Japan.* In Cook's third voyage is a chart of a small part of this coast, and the nautical observations which relate

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late to it. (Vol. III, page 397, and following, of the original). See also the chart comprised in the collection furnished to M. De La Pérouse.

47. *Lekeyo Islands*, to the south-west of Japan; Philip Buache has given, in his *Considérations Géographiques & Physiques*, (page 130,) extracts from all the letters the missionaries have written relative to these islands, concerning which there is but little known at present. See also the *Lettres E'difiantes*.

48. *A large Island*, peopled and rich, said to have been discovered by the Spaniards towards the year 1600.

In the Philosophical Transactions of the Royal Society for the year 1674, No. 109, vol. 9, page 201, paragraph 11, is to be found the following note concerning this island: " That in the
" South Sea, at the $37\frac{1}{2}$ deg. northern latitude,
" and about 400 Spanish, or 343 Dutch, miles,
" that is, 28 deg. longitude east of *Japan*, there
" lay a very great and high island, inhabited by
" a white, handsome, kind and civilized people,
" exceeding opulent in gold and silver, as had
" been experimented many years since by a Spanish ship sailing from the *Manilles* to *New*
" *Spaine*; infomuch that the King of *Spain* in
" the year 1610, or 1611, for further discovery,
" and to take possession of the same, sent out a
" ship from *Acapulco* to *Japan*; which by ill

“conduct proved successful: since which time
 “the prosecution of that discovery had been
 “neglected.”

SUPPLEMENT.

49. *Caroline Islands*. A particular chart is constructed of these islands from that of Father Cantova, and the accounts of other missionaries, which have been collected in the way of an extract, as a supplement to the *Histoire des Navigations aux Terres australes* of the president de Brosses. (Vol. II, page 443, and following.)

50. *Island to the south*, between Mindanao and the Moluccas. See, for all this part, *Captain Forster's Voyage to New Guinea*.

M. De La Pérouse will find, in his collection of charts, a particular one of the straits of Waygew and New Guinea, and a chart of the west part of New Guinea, with the islands of Arrow, and part of that of Ceram.

These charts may be useful, in case contrary winds should oblige him to sail through these straits. M. De La Pérouse may also consult a chart to be found in vol. II, page 310, of the *Histoire des Navigations aux Terres australes*, under the title of *Carte des Isles des Papous*, copied from the original of Mr. Isaac Tirion, a Dutchman.

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All this part agrees with what captain Forster has published on it since.

51. *Straits to the east and west of the Island of Timor.* M. DeLa Pérouse will find, in the account of Dampier's voyages, instructions which may serve as a guide to his ships in sailing through whichever of these straits circumstances and the wind may induce him to prefer.

In the collection which has been put into his possession, there have been introduced particular plans of the passages, such as the straits of Allofs, of Lombock, of Solor, of Sapy, and others among the southern islands of the archipelago of Asia, which are but little frequented by European navigators.

M. De La Pérouse will take notice, that the southern and eastern coasts of the island of Sumbava, or Combava, have not yet been examined.

52. *For the Isle de France,* and the Cape of Good Hope, he is referred to the *Neptune Oriental* of M. Daprès, and to the instructions thereto joined.

53. *Islands of Marsereen & Denia.* These are two little islands known by the Dutch, whither they send, it is said, for wood; the situation of them is nevertheless undetermined. Captain Cook regretted not having it in his power to search after these islands.—(*Second voyage*, vol. II, pages 244 and 246 of the original).—

They are laid down upon the chart of the South Sea,

Sea, conformably to the position which *Cook's third Voyage* has given them on the general chart; that is to say, *Marfeveen*, the most northerly of the two islands, in 40 degrees and a half south latitude, and at two degrees and three quarters to the eastward of the meridian of the Cape of Good Hope; and *Denia* in 41 degrees of latitude, and three degrees to the eastward of the Cape; but it may be observed, that on Halley's variation chart they are placed at 41 degrees and a half of latitude, and 4 degrees east of the meridian of the Cape.

54. *Cape (or isle) Circumcision*, discovered the first of January, 1739, by M. De Lozier Bouvet.

This navigator took his departure from the Island of Saint Catherine, on the coast of Brazil. He used the chart of Pieter Gooz, who places this island in 333 degrees of longitude, reckoning from the Island of Teneriffe, which corresponds with 46 degrees west of the meridian of Paris. His course corrected, from the Island of Saint Catherine to Cape Circumcision, gives 53 degrees three quarters difference of longitude to the east; and he thence concluded the longitude of this cape to be from 26 to 27 degrees of longitude from Teneriffe; that is to say, from 7 to 8 degrees east of Paris.

But the longitude of the place whence M. Bouvet took his departure, viz. that of S. Catherine, was erroneous by 4 degrees; for this longitude,

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corrected according to those which recent observations have given for Rio-Janeiro and Buenos Ayres, ought to be 329 degrees from the meridian of Teneriffe (instead of 333), or 50 deg. west of that of Paris (instead of 46). Therefore, if 50 degrees west, the longitude of S. Catherine, be subtracted from 53 degrees three quarters, the farthest point of M. Bouvet's run eastward, there will remain three degrees three quarters for the east longitude of Cape Circumcision, instead of from 7 to 8 degrees, which M. Bouvet had computed, and which, in fact, he had a right to compute, agreeably to the chart of Pieter Gooz, who laid down the Island of S. Catherine, or the meridian whence he took his departure, four degrees too much to the east.

M. Le Monnier, of the academy of sciences, has attempted to determine the longitude of Cape Circumcision by the theory of the variation of the compass; and he fixes this longitude between one and two degrees to the east of Paris. See his *Dissertation* in answer to Mr. Wales, printed at the end of the first volume of the translation of the third Voyage of captain Cook.

But as the differences of meridians, deduced from observations on the variation of the compass, can at best be only uncertain approximations, it has been thought adviseable, to adhere to the difference
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of meridian which results from the calculations of the courses of M. Bouvet, from the Island of St. Catherine to Cape Circumcision, without pretending to maintain, however, that the reckoning kept by this navigator is exempt from error. The Cape is consequently laid down, upon the chart of the South Sea, at three degrees three quarters east from Paris.

According to this position, founded on the reasons deduced as above, it is no longer a matter of surprize, that if, as there is every reason to believe, there be such a place as the Cape (or Island) of Circumcision, it should have escaped the researches of captains Cook and Furneaux, since the first, in his track from the westward, did not get into the latitude of this cape, which is situate upon the parallel of 54° south, till he was only at about eight degrees east of Greenwich, or five degrees two-thirds east of Paris; and the second did not get into the latitude till he was only at ten degrees and a half from Greenwich, or eight from Paris; both of them therefore must have run beyond it when they got into its parallel.

LETTER

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LETTER

From M. Le Maréchal De Castries to M. de Condorcet, perpetual Secretary of the Academy of Sciences.

SIR,

Versailles, March 1785.

THE King having come to the resolution to employ two of his frigates in a voyage, which may at the same time realize objects beneficial for his service, and furnish more extensive means of perfecting the knowledge and the description of the terrestrial globe, I could wish the academy of sciences would cause to be drawn up a memoir, detailing distinctly and at some length the different physical, astronomical, geographical, and other observations, which may be thought most convenient and important to be made, as well by sea in the course of the voyage, as upon the lands or islands which may be touched at. To direct the views of the academy to the plan which it may adopt in this respect, I am to inform you, Sir, that the ships of his Majesty will have orders to proceed as far to the north and south as the sixtieth parallel, and that they will traverse the entire circumference of the globe, in respect to its longitude. The academy, therefore, may include in its speculation nearly the totality of the known

known coasts or islands, and the whole extent of the surface of the sea on both sides, comprehended between the two great masses of land which form the continents.

By inviting the academy to engage in a labour which will prove so very agreeable to the King, you may assure yourself, Sir, that the greatest attention will be paid to such observations and experiments as the academy may point out, and that the greatest exertions will be made to comply entirely with its wishes, as far the circumstances of the voyage will allow the performing of operations of this nature. It will afford pleasure to his Majesty to learn, that the erudition of the academy concurs with the love of glory and the zeal which animate the officers of his navy; and he cannot but anticipate the greatest advantages in the probable advancement of the sciences, from an expedition of which the principal object is to further their progress.

MEMOIR

Drawn up by the Academy of Sciences, for the use and direction of the learned and scientific persons embarked under the orders of M. De La Pérouse.

M. le Maréchal De Castries having, by direction of the King, demanded of the academy a *memoir*,
which

which might point out such observations as it should judge the most necessary to be made in the intended voyage round the world, undertaken for the progress of the sciences, the academy accordingly has commissioned each of its first pensionaries of the different classes to collect the particular memoirs furnished by the various members of his respective class; and moreover has caused these memoirs to be arranged and reduced into proper form by four commissaries, and is anxious to lay the general result as soon as possible before the minister, as a proof of the ardent wish it feels to concur, by its zeal and its care, in the execution of an undertaking, the success of which will contribute equally to the glory of the monarch, to that of the nation, and to the advancement of the sciences.

To throw as much order and perspicuity as possible into this summary, the academy has judged it proper to assemble, under one point of view, the observations relative to various branches of science, which resemble each other in the nature of their object, although cultivated by different classes. Such are the observations which relate to the studies in which the classes of geometry, astronomy, and mechanics are engaged. These observations may be placed with the more propriety at the head of this memoir, as they are connected with cosmography, and have by that means a more direct

direct relation to the principal object of the voyage to be undertaken by order of his Majesty.

GEOMETRY, ASTRONOMY, MECHANICS.

ONE of the most interesting researches, which the navigators can be at present employed in making, is that which relates to the ascertaining of the length of the pendulum, vibrating seconds, in different latitudes. The inductions which have hitherto been drawn from this instrument, to determine the variations of gravity, rest on a very limited number of operations, made by different observers, and with different instruments; and this want of uniformity in the operations must have a necessary influence on the certitude of the consequences deduced from the comparison of the results.

It is evident, that a collective number of operations of this kind, performed with care, by the same persons, and with the same instruments, is much wanted; and the academy cannot too earnestly recommend to the navigators, to prosecute this inquiry with all the exactness possible in every place they may put into on their voyage.

The determination of the longitudes will be necessarily one of the principal points, to which the navigators will direct their attention; in order, however, that still greater advantages may be obtained

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tained from their researches on this head, the academy recommends to them to preserve the original calculations from the observations of longitude, by the distance of the moon from different stars, as in the event of any astronomer's hereafter correcting the elements which should have served to determine the longitudes in question, this correction may be also employed, in its turn, to rectify the calculations of these same longitudes.

The navigators, being furnished with *ephemerides*, know beforehand the moment of the different eclipses which will happen during the course of their voyage, as well as the places where they will be visible. The academy requests of them not to limit their observations to the instants of the commencement or the end of these eclipses, but to designate the situation of the horns in the most particular manner possible.

The phenomenon of the tides is a subject too nearly allied to navigation not to engage particularly the attention of the voyagers. What appears to be most necessary in this investigation is, to observe with care the double tides of each day. The academy thinks it expedient further to remark, that there are no accurate observations extant relative to the tides on the west coast of Africa, or on that of America, any more than to those on the coasts of the Moluccas and Philippine Islands.

With regard to any observations to be made pertaining to geography, they will be directed conformably to the plan which has been pointed out to the navigators by his Majesty.

The academy have only to subjoin a copy of some remarks, which have been drawn up for the purpose by M. Buache, its geographic associate.

PHYSICS.

AMONG the great variety of objects which the study of physics comprehends, it is peculiarly incumbent on the navigators to direct their attention to such as are governed by a regular cause, but the intensity of which is nevertheless subject to variations, which can only be determined by connected and multiplied observations. Of this nature is the variation of the compass.

Observations on the variations of the needle making a principal part of the means of direction, which will be employed by the navigators, the academy, on this head, judges it sufficient to recommend to them to observe, by the help of the accurate instruments with which they will be furnished, the diurnal variations of the needle, while they make any stay on land.

It has been discovered by some observations first made at Brest, at Cadiz, at Teneriffe, and at Goree, on the coast of Africa, and afterwards at Brest,

Brest, and at Guadaloupe, that the intenseness of the magnetic force of the needle was visibly the same in these different places. The academy wishes the navigators to repeat these observations in a larger extent of country, calculating the magnetic force by the continuance of the oscillations of a good dipping needle.

The observations in question cannot be very correct, unless they should be made on shore, or in roadsteads. However it will not be amiss to try them also at sea, in very calm weather, when it is possible they may afford results sufficiently exact. It is recommended also, as a matter of the greatest importance, to prove the magnetic force in those points where the inclination is the greatest, and in those where it is the smallest.

The navigators are also desired to observe, with the utmost care, the dip of the needle in all such places as the ships may touch at, and even at sea when the weather will permit it. In this last case, it will be necessary to keep minutes of the uncertainty of the observations, and also to assign to them, as nearly as possible, the degree of precision.

The academy further invites the navigators, to keep an accurate journal of the rise or fall of the barometer in the neighbourhood of the equator, at different hours of the day, in order

to discover, if possible, that quantity of the variations of this instrument which is produced by the action of the sun and moon, this quantity being then at its *maximum*, whilst the variations produced by the ordinary causes are at their *minimum*. It is unnecessary to add, that these delicate observations require to be made on land, and with the nicest precautions.

The navigators may also ascertain the truth of a report, pretty commonly credited, that the mercury rises an inch higher in the barometer on the west coast of America than on the east coast.

The state of the atmosphere, and its continual variations, the noticing of which is an object of the highest importance in a voyage by sea, will moreover furnish the navigators with a detail of meteorological researches, interesting from the frequently opposite directions of the upper winds, compared with those which blow near the surface of the sea.

As the navigators carry out with them a certain number of small aerostatic balloons, the academy recommends the making use of them in order to ascertain the height where the winds which blow in the lower part of the atmosphere change their direction, as well as the course of those directions. These observations require particular attention in all places where the trade winds prevail, and

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and it would be curious and interesting, to trace the connexion which these winds have with those in the upper region of the air.

As the fluid on which the navigators are about to float will attract their attention by the divers currents they will find in it, they are invited to lay before the academy, on their return, an abstract of their important labours for ascertaining the currents in different parts of the globe, by comparing the course, determined by the ordinary means, with the course computed by the observation of the longitude and latitude.

Besides the effects which are in the ordinary course of nature, the navigators may find opportunities of observing phenomena which only present themselves at intervals, such as certain meteors, and, among others, the aurora borealis and australis. The academy recommends the observing the height and amplitude of these auroras.

There is a difference of opinion concerning the cause which produces water spouts: some attribute them to electricity, others consider them as the effect of a whirling motion contracted by a mass of air *. The navigators would do well

* According to this last hypothesis, the centrifugal force of the particles of air at a distance from the axis of rotation must diminish the pressure of those which are placed near that axis, force them to let go the water which they held

well to observe attentively all the circumstances which may conduce to the explication of this singular phenomenon.

The navigators will have it in their power to make a number of experiments upon the temperature of the sea, and upon its saltness in different latitudes, and at different depths, the specific weight of its waters, with its different degrees of bitterness, according to the distance more or less from the coasts. The academy also wishes them not to neglect the comparison of the temperature at a certain depth, with that of the fluid taken near its surface.

It will be proper also, that the navigators take all opportunities to observe the temperature in any holes dug in the earth, or excavations which they may meet with, as well as that of springs and deep pits.

in dissolution, and occasion a cloud, the form of which will be nearly that of a revolving solid (*solide de revolution*,) the small drops of which will quickly disperse themselves by the effect of the centrifugal force.

The pressure of the air of the atmosphere not being diminished in the direction of the axis of rotation, the air must perpetually renew itself, making its way by the two extremities of this axis, and, by the diminution of the pressure, keep up in the interior a continual precipitation of water, which will last as long as the whirling movement, the abundance of which will depend on the swiftness of the movement, and on the mass of air which it affects.

Seamen

Seamen have distinguished the flat pieces of ice, which cover certain parts of the sea, from the thick masses, which resemble islands, and appear like floating mountains. It is much to be wished, that a well connected examination of the circumstances relative to these two kinds of ice may furnish room for conjectures concerning their formation.

The light which shines sometimes upon the surface of the sea has been attributed to the appearance of a multitude of small luminous animals; but as this light is visible in every place where the sea is put in motion, it will be necessary to examine this phenomenon more circumstantially, if possible, than has hitherto been done, in order to discover, whether the brightness in question may not be traced to some other cause,

CHEMISTRY.

THE solution of the under recited question would be of use to throw light upon the theory of gasses: is the air purer, or does it contain more vital air on the surface of considerable tracks of sea than elsewhere, as Mr. Ingen-Houfz thought he remarked upon the sea which washes the coasts of England? and in case the experiment be verified, a trial may be made, whether the result be the same in the open sea as on the coasts, where

large quantities of sea-wrack, and different plants, which cover its surface, are met with.

It appears now sufficiently evident, that sedative salt is found naturally in the water of some lakes, such as that of Monte-Rotondo in Italy. This circumstance is not, perhaps, peculiar to that lake; and it remains still an object of inquiry for the navigators, in case they should visit the interior of any countries, where they may have occasion to land. If they should happen to meet with any mineral alkali, they are desired to examine the substances of which it is compounded, its distance with respect to the sea, and other circumstances of that kind, which may serve as a basis for conjectures relative to the means which nature employs to operate the alkalization of marine salt.

Lastly, the navigators, attentive to all inquiries which may afford light to chemistry, in whatever relates to the processes of the arts, will notice, in the countries and places they may touch at, the colours employed for the dyeing of stuffs, the substances from which those colours are extracted, and the means employed for their application.

ANATOMY.

The attention and the curiosity of those who have undertaken great voyages have naturally been directed towards the different varieties which are found in the human species. Most voyagers have

have contented themselves with noticing and describing the exterior characters, which arise from the colour, the stature, the conformation, and other differences of the same nature, which are susceptible of being caught with facility even by the eye of an ordinary observer.

It is to be wished, that this comparison might be extended to the interior parts, by anatomical researches; with this view, there should be procured the bones of the head and the os hyoides of a dead body of a good size, from among such tribes or nations as may appear to differ sensibly from those of the temperate regions of Europe in the form of the visage, or that of the whole head; some knowledge might thus be obtained concerning the varieties which are found in man with respect to the form of the bones of the head.

To render this knowledge still more interesting, a comparison might be made of the proportions of the body of men of different nations with those which painters observe for representing *la belle nature*, in a beautiful and comely figure, by dividing the height of the body into eight parts. It would be necessary also to take it in a right line from the bottom of the heel to the crown of the head.

The dimensions it will be requisite to measure with the greatest care, are the length between the ends of the middle fingers of the two arms extended at full length, the length of a single arm,

arm, from the arm-pit to the extremity of the middle finger; the circumference of the head at the height of the brow; that of the thorax or chest at the breast; and that of the belly at the navel.

Anatomists have found, that the number of the lumbar vertebræ has varied sometimes from five to six. It would be expedient to examine, whether the corpse, in the countries where the men are of an extraordinary height, have six lumbar vertebræ.

It will be proper to add to these informations, as far as may be possible, that of the duration of life, and of the age of puberty in both sexes.

ZOOLOGY.

Zoology, in the present state of the science, presents a field of observation well adapted to interest the navigators by the advantages it may reap from their discoveries, for the progress of comparative anatomy; yet this object cannot be successfully attained, unless their descriptions shall comport with a common method. The academy invites them to make use of the method which has been adopted in the *Histoire naturelle générale & particulière*, as being that which contains the largest assemblage of descriptions in this kind ever yet made upon one uniform plan.

With regard to the description of new species of birds which may be met with, the *Ornithology* of M. Brisson may be taken for a model.

The taste for uncommon shells has made most voyagers more attentive, in their researches on this head, to what may gratify the curiosity of amateurs, than to what may furnish new lights to the learned. A very material point would be to examine all the shells found on one and the same coast, particularly the predominant species, and to observe the conformation of the animals contained in them: and further to compare, as far as can be done, the petrified shells of different latitudes, with the live shell fish of the adjacent seas; and to notice whether the petrified shells of Europe have their living analogies in remote seas, as seems to have been the case in some instances.

MINERALOGY.

Mineralogy opens a vast and fertile field to the observations of the voyagers. These observations will be enhanced in value in proportion to their mutual connection, as from this circumstance they will have a tendency to enlighten each other: thus an examination of the substances or strata which form the two corresponding coasts of a strait, or of those which compose the soil of

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of an island on one side, and the continent which it faces on the other, may furnish cause for conjecture whether a sea shore be of ancient or new formation, whether an island be near to the mouth of a river, or whether it have made a part of the continent.

It would be further useful to inquire in every island of any extent, or on such portions of the continent as may be particularly inspected, at what height above the level of the sea marine deposits are found in horizontal beds or strata.

It has been suspected, that mountains composed of horizontal and calcareous strata diminish in height in proportion as we come nearer to the equator, and that, in that part of the world, the mountains which have this structure of horizontal strata scarce rise above the level of the sea. This would be an important fact to ascertain.

In general the aspect of mountains, especially towards the places where their sides, cut in a peak, might offer more marked indications of their structure, the composition of rocks of granite, which form the nucleus of many of these mountains, the products of volcanoes, and above all the basalt, &c. are so many objects of research, which cannot escape the enlightened attention of the navigators.

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Crystallizations present, to the eyes of naturalists, an appearance too attracting to render it necessary to advise the navigators to collect as great a number of them as they possibly can. The academy, however, wishes them, to pay a particular attention to certain varieties not found in the King's cabinet, or which do not appear under forms sufficiently pure, or sufficiently pronounced. Here follows a list of them, in which the nomenclature adopted by M. Daubenton, in the methodical distribution of minerals, is made use of.

1st. *Rock-Crystal in two pyramids*, without any indication of an intermediate prism.

2. *Feld-spar* in an oblique prism, with four sides or fronts.

3. The *octaedral cuneiform* ponderous spar, with acute summits.

4. The *fluor spar* in regular octaedra.

5. The *calcareous spar*, in pointed and very projecting rhomboids.

6. The *calcareous spar*, with six rhomboidal fronts, and six lozenge faces.

7. The *ferruginous pyrites* with twenty triangular faces.

8. *Cobalt mineralised with sulphur*.

To accommodate the voyagers in their search of these varieties, the academy will furnish them with polyedra executed in wood, exactly representing the forms of the crystals. The voyagers will

will of course procure specimens of such woods and marbles as they shall judge to be the most curious. It should be observed here, that the specimens of this kind in the King's cabinet, are 7 inches long, by 5 wide, as it is necessary they should possess this magnitude, in order to trace accurately the characters of a wood or marble. In the wood, moreover, should be a transverse section; in a stump 10 inches long, they may easily take a round or solid piece cut transversely, and a small board or plank, 7 inches long, sawed longitudinally, by an incision which passes through the pith.

The voyagers, where they land, may happen to meet with *tourmalines* and other crystals, which become electric by simple heat. As most part of these crystals are in clusters adhering to the gangue by one of their extremities, and in different directions, the academy recommends to the travellers to make experiments, to ascertain whether the species of positive or negative electricity, constantly manifested by these crystals at one of their ends, have any relation to the position of these crystals, whether on their *gangue*, or relatively to one another.

BOTANY.

The various voyages undertaken for a number of years past, have enriched botany by the discovery

covery of a multitude of plants unknown before; and the powers of nature are so inexhaustible, that we are led to expect a new harvest from the researches of our voyagers; it were to be wished however, that these researches might be principally directed towards objects of utility, such as the knowledge of plants made use of by the inhabitants of the different places where the voyagers may put in, whether for food, for medicine, or in relation to the arts. They might also collect specimens, and seeds of plants, of which the parts used only are commonly sent us; adding, at the same time, complete descriptions of them: in this class, are almost all the woods used in dyeing, those which cabinet makers work in for use or ornament, and certain roots, barks, and leaves, which are current in the way of trade, and the origin of which ought to stimulate our curiosity the more, in proportion as their use is become more familiar to us. In general, navigators cannot bestow too much time and labour in procuring a rich and varied collection of seeds of exotic trees and plants, gathered in countries which do not very sensibly differ in temperature from that of France; and the productions of which, when naturalized in our climate, may serve one day to adorn our plantations, or to multiply our artificial meadows.

A plant

A plant is cultivated in New Zealand, of the *liliaceous* tribe, known by the name of *New Zealand flax*. This flax is made use of in that country in the manufacture of cloths, cordage, and different articles of weaving. Captain Cook brought to England a great quantity of the seeds of this plant, none of which came to maturity. The transporting a few sets of this plant would be perhaps one of the finest presents the voyagers could make to our climates.

We have in France only the male plant of the paper mulberry tree, (*morus papyrifera*, *Linn.*) used in China to make paper, and in the Island of Otaheite to make stuffs. We are acquainted with only the female plant of the weeping willow, (*salix Babylonica*, *Linn.*):—the male of a diœcious species of strawberry, called *fragaria Chilensis*, is also unknown to us; it grows naturally in Chili, whence it has been brought by M. Frezier. The fruits of this plant, which, in their native soil, grow sometimes to the size of a pullet's egg, are much smaller on the sets which are cultivated in France; this difference may arise, in a great measure, from our want of the male plant, the absence of which is but imperfectly supplied by the farina of the hautboy, or large strawberry. If, from any particular circumstance, the voyagers should touch at countries which produce the various

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rious plants in question, they should consider of the best means to bring home plants of that sex, which is wanting in each of the above-mentioned species.

The academy has joined to this various notes, which have been communicated by many of its members, and in which the voyagers will find the explanation of the proceedings relative to some of the objects proposed in this memoir.

OBSERVATIONS OF M. BUACHE.

Government having been very assiduous in collecting all the geographical information, that could be procured relative to the seas through which it is proposed to sail in this new voyage, it will be sufficient to point out here the particular parts of these seas, where new discoveries may be expected to be made.

1st. In the southerly part of the South Sea, there are two spaces, which are yet but little known, and where there is every reason to hope for the discovery of new land.

The first is the space situate to the south of Easter and Pitcairn Islands, between the 30th and 35th degrees of latitude. Cook's new charts mark a group of islands there, said to have been discovered by the Spaniards in 1773; and most of the navigators who have passed to the north of

this space, have met with indications of land. It is moreover observed, in the history of the voyages to the South Sea, published by Dalrymple, that the pilot Juan Fernandez, in his voyage from Lima to Chili, about the year 1576, kept at a distance from the coasts of America of about 40 degrees, that he might not be obliged to struggle continually against adverse winds; and that after a month's sailing, he came to a coast, which, from its extent, he conceived to be a continent. The country was fertile, and inhabited by a white people, of the size of Europeans, who were clothed in a very fine stuff; they received the navigators in a friendly manner, and furnished them with the productions of the country. Fernandez, proposing to fit out an armament, and to return to this new country with his companions, kept the secret of this discovery, but died before the project could be executed, which was soon after lost sight of. This land of Fernandez, different from the island to which that navigator gave his name, may be the same as the group of islands said to have been discovered by the Spaniards in 1773.

The second space which deserves to be examined more particularly, is that which is comprised between the New Hebrides and New Guinea. M. De Bougainville and M. De Surville are the only navigators who have passed through it, and

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and from the situation of such parts of the land as they saw, there is every reason to believe, that this land is the same as the ancient islands discovered by Mendana in 1567, and known afterwards by the name of Solomon's Islands. M. De Surville kept this land in sight for a hundred and twenty leagues together, and upwards, and always in the latitude assigned to Solomon's Islands.

As a great part of the ancient discoveries of Mendana and of Quiros have been found again, there is every reason to believe the rest will be found, and with this view their memoirs deserve to be consulted. The Island Taumago of Quiros, will probably be found again, with those of Chicayana, Guaytopo, Pilen, Naupau, and others near it, since it was on quitting that island, or about ten days after, that Quiros obtained sight of the Tierra del Espíritu Santo, which at present is known under the name of the *New Hebrides*.

2ndly. The northerly part of the Pacific Ocean, less known still than the southerly part, may give occasion to a yet greater number of discoveries. There is first to the south of the Marianne Islands, or Ladrones, between the 5th and 10th degrees of north latitude, a chain of islands divided into several clusters, which extends more than 25 degrees of longitude: these islands are known only by a vague description, and a chart con-

structed upon the bare report of the inhabitants of some of these islands, who were cast by a tempest upon the coast of the Island of Guam, and whom father Cantova examined concerning the situation of these islands; they have escaped the observations of navigators, because in their run they directed their course towards the Island of Guam, which is more to the north.

That part of this ocean which is to the north-east of the Ladrões, or to the east of Japan, is equally unknown; we have only indications of there being a good number of islands of some importance, and among others, a pretty considerable island is said to be situate at about three hundred leagues to the east of Japan, to which its inhabitants resort for the purposes of trade.

The land of Jesso, to the north of Japan, does not appear to be the same as the Russians and English have represented it. The information which Cook's last voyage gives us respecting the eastern coast of Japan leads us to think, that the chart of the discovery of Jesso, made by the Dutch vessel the *Kastricum*, is tolerably correct; but the Dutch have only discovered part of this land, which may therefore be worthy of further investigation.

3dly. Upon the west coast of America, to the north of California, it is more than probable that the River of Martin d'Aguilar, in 43 degrees of latitude,

tude, will be again discovered. Martin d'Aguilar was one of the pilots of Sebastian Viscaino, whose voyage on this coast is one of the most interesting that has been made.

It is much to be wished, that some information could be obtained of the people in the interior of the countries to the north of California; and, upon this point, *Carver's Travels* may be consulted, and even the letter of Admiral *De Fuente*, however it may have been cried down. It is also desirable that, in returning home, the navigators may explore the Islands of Denia and Marseeven, situate to the south of the Cape of Good Hope, and whither the Dutch send to fetch wood, &c.

If it be intended to sail towards the south pole, with a view to any investigations in natural history, it would be proper to steer to the south-west of the Cape of Good Hope, and of Cape Horn.

In the first case, Cape Circumcision might be found again, in the longitude that M. Le Monnier has assigned to it, that is, between three and four degrees of longitude to the east of the meridian of Paris; this position is indicated by other observations independent of those of M. Le Monnier. In the latter case, the islands and harbour where Drake landed might again be brought into notice.

The navigators are also desired to notice the names which the inhabitants themselves give to the islands they may discover, and endeavour to procure a vocabulary of the different names given by those islanders to the most remarkable objects, and those which are of most necessary use.

EXAMINATION OF THE NATURE OF THE AIR.

The analysis of the atmospheric air, and its degree of salubrity, in different shores and latitudes, and at different elevations, is an object so much the more interesting, as there have hitherto been no accurate experiments on this subject, and as we are ignorant whether the nature and composition of the air be the same in different parts of the world and at different elevations. The test of nitrous air appears to be the most simple and the most sure. M. Lavoisier, in a memoir, printed in the collection of 1782, has shewn, that, provided more nitrous air be employed than is necessary for saturation, it will be always easy to ascertain, by a simple calculation, the quantity of vital air contained in a given quantity of atmospherical air.

A principal requisite in experiments of this kind is the procuring of nitrous air as nearly as possible pure. That which is produced from the solution of mercury by the nitrous acid is the purest of all; but for want of it, that which is obtained

tained by means of iron may be used without inconvenience.

The first thing to be done is to introduce two hundred parts of nitrous air into the *eudiometer*, then add a hundred parts of the air on which the experiment is to be made, and observe the number of parts which remain after absorption. The number obtained by subtracting the remainder from the sum of the two airs, multiplying this result by forty, and dividing the product by a hundred and nine, will express the quantity of vital air contained in a hundred parts of the air examined.

It will be proper to keep a memorandum of the height of the barometer and thermometer.

SPECIFIC GRAVITY OF THE AIR.

It being a part of the plan of the navigators to take on board the frigates an air-pump, we think it would be advisable to add to it a globe of glass, capable of being adapted to it, which might thus be exhausted of the air, and afterwards filled with it. By noting the difference of weight between this globe or matrafs when empty and when filled with air, the specific gravity of the atmosphere, in different latitudes, will be obtained. It is of particular moment to observe with the greatest care the height of the barometer and thermometer, during each of these operations.

To make experiments of this nature, the navigators are supposed to have in their possession a very exact pair of scales, which will give the weight with nicety and precision to half a grain.

EXAMINATION OF WATERS.

The abbé Chappe, in his voyage to California, determined the specific gravity of sea water, in a great variety of places, and thence have resulted a number of interesting deductions with respect to the degree of saltness which it possesses. M. De Cassini published the result of these experiments from the notes which he found in the manuscripts of the abbé Chappe. It is of importance to pursue these experiments, as an opportunity now offers for determining, so to speak, in one single voyage, the degree of saltness found in almost every sea.

The navigators will require for this purpose a very accurate hydrometer, constructed upon the principles of Fahrenheit, and similar to that which M. Lavoisier directed to be made for the abbé Chappe. The same instrument may be employed for ascertaining the specific gravity of the water of lakes, rivers, and springs; and by joining thereunto some experiments made with reagents, an idea may be formed both of the quality, and of the quantity of salts contained in those waters.

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When after the experiments by regeants and specific gravity. the water shall appear to contain any thing remarkable, a portion of it may be evaporated, and the residuum laid by, carefully labelled, in order to be examined on the return of the voyagers,

QUESTIONS

Proposed by the Society of Medicine to the gentlemen who are to accompany M. De La Pérouse on the intended voyage, read in the sitting of the 31st of May, 1785.

Every thing which relates to natural history and to natural philosophy, in the voyage about to be undertaken round the world, must necessarily interest the science of medicine, and contribute to its advancement; but the society of medicine rather wishes to confine its views to the objects which particularly concern the science. As the questions to be proposed are pretty numerous, we shall present them here under titles which will form so many heads of medical enquiry.

§ I. ANATOMY, PHYSIOLOGY.

Structure of the human body, and the functions of its organs.

Most voyagers have written upon the general form and structure of the bodies of the inhabitants observed by them in different countries; their descriptions,

scriptions, however, are now well known to be filled with exaggeration and errors. We have every reason to expect greater accuracy from the scientific gentlemen who accompany M. De La Pérouse, and they are requested to notice the following objects with particular attention.

1st. The ordinary structure of men and women; the great and the small diameter of the head; the length of the superior and inferior extremities measured from the joint of the arm to the extremity of the middle finger; from the thigh to the extremity of the great or second toe; the circumference of the pelvis; the width of the chest; that of the shoulders; the height of the vertebral column, measured from the first vertebra of the neck to the sacrum: these proportions are taken according to the divisions of painters.

2ndly. The form and colour of the skin and its different regions; the same with respect to the hair and nails.

3dly. The particular form of the head or cranium, that of the face, and especially of the forehead, of the nose, eyes, ears, mouth, chin, teeth, tongue, with the hair of the head and of the beard.

4thly. These different parts of the body are those which the natives are accustomed to deform by holes, incisions, and by extraneous substances which they insert into them, as well as by oils, and

and by colours prepared with ochres or vegetable juices.

It may be useful to describe minutely the processes by which the savages imprint these indelible marks in their skin; the substances they make use of for this purpose; how they prepare and apply them; the age and the circumstances in which they practice this operation, and above all, the alterations, local deformities, or other effects produced thereby upon each individual.

5thly. The defect, the excess, or the different conformation of the parts of the body, as the elongation or flattening of the forehead, the dilatation or narrowing of the nose, the extent of the mouth, and of the ears, whether these differences be uniformly the effect of the natural organization, or produced by particular practices. Dampier affirms, that the inhabitants of Van Diemen's Land are deficient in two of their teeth: Is this a natural or artificial defect? It is thus that the double mouth of the inhabitants of America, in the vicinity of Prince William's Sound, observed by captain Cook's men, is the effect of a transverse incision made beneath the lower lip. The peculiarities of the apron in women, the prodigious lengthening of the scrotum, and the brown spot upon the backs of children, observed in many parts of America—do they really exist, and are they the production of nature?

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We yet know very little relative to the using of the two hands indifferently. The question which regards ambidexterity, or the preference we give to one hand over the other, has not yet sufficiently occupied the attention of naturalists; it is therefore important to examine whether the people which may be visited make a like use of both their hands in working, or whether they employ one in preference, and whether the pre-eminence of the right, among polished nations, be not the effect of prejudice. It would be also of use to discover whether, among the people who are accustomed to go naked, there are not some who can use their feet with as much dexterity as their hands, and for the same purposes.

6thly. We have yet had no well-established accounts respecting the comparative strength of different men: it would be well to make experiments on the burdens carried by the inhabitants of those countries where nature has not been debilitated by effeminacy and the various customs admitted into polished nations, together with the space which they can pass in a limited time, either by walking or by running.

7thly. The nature of the sense of sight, of hearing, of smelling, may furnish some important facts with respect to the vigour or the imbecility of their organs. Much has been said of the acuteness of the sense of smelling in savage tribes; it would

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would be curious to verify this matter, and to discover whether in the individual, in whom this refined faculty exists, it have not a tendency to impair the energy of some other sense.

8thly. The voice, the greater or less distinctness of articulation, are important subjects for examination, as well as the expressions of joy, of pleasure, and of pain.

9thly. The age of puberty in men and women. Whether the latter be in all climates subject to the periodical evacuation? Whether its quantity be influenced by climate, and what is the period of its cessation? What is their condition during pregnancy? Are they delivered with ease or difficulty? Do they stand in need of help in this operation? Do they tie the umbilical cord? Is this operation performed before or after the coming away of the placenta? Do they swaddle their children, or what means do they adopt for supplying the place of swaddling clothes? Have they any particular practice in the treatment of new-born children, such as moulding or shaping the head, and washing them? Do the mothers themselves suckle them, and to what age? And are there more males than females born?

10thly. What proportion of children die from birth to the age of puberty, and what in general is the length of the life of men in the different climates?

11thly.

11thly. The quickness or slowness of the pulse compared to that of Europeans, which is nearly that of sixty-five or seventy pulsations in a minute.

12thly. The affinity which the colour of the skin has to that of the humours. The spermatic fluid of men more or less tawny, the cerebral pulp, and the blood, have they any correspondence with the colour of their skin? Does this colour vary among the blacks in any individuals, such as the white negroes, the pale, wan negroes, &c.? Is this variation produced by disease, or from a constitution changed by the influence of climate, as is thought to be the case with regard to negroes transplanted into cold countries?

13thly. Are there in America men to be found whose breasts contain milk in sufficient quantity to suckle children, as has been reported? What opinion is to be formed of the hermaphrodites of Louisiana? Does the savage life render the inclination of the sexes periodical among many tribes? Is it true that certain natives of America cause their virile member to be stung with insects, in order to excite in it a considerable swelling.

14thly. We shall take no notice here of giants, pigmies, men with tails, &c. because these pretended extravagancies of nature were never seen, unless by prejudiced or ignorant voyagers, or because they never existed unless in their wild imaginations.

§ II. HYGIEINE.

Of the air, water, aliments, habitations, clothing, exercises, and the passions, as far as they concern the health of men.

THIS part of medicine presents the largest field of observation to the voyagers; but it is one of those concerning which there are fewer questions to propose, because in general these things of course come under their notice. The following articles, however, claim particular consideration :

1st. The nature of the air in the different places tried by the eudiometer; its highest and lowest temperature in the sun and shade; its density, humidity, weight, elasticity, and its electrical state, measured by the different electrometers, and especially by that of M. De Sauffure; the division of the seasons; the prevailing winds, or their variations; the nature of meteors, as snow, hail, rain, thunder, hurricanes, sea and land water-spouts; the change of the air by vapours, or by the emanations from vegetables, comparing, according to the experiments of Ingenhoufz, the fluids which exhale from their different parts exposed to the shade or to the sun, particularly of those which are said to be noxious to animals or plants in their neighbourhood.

2ndly. It will be of advantage to analyse the sea water at different depths, nearer or further from the shore ; also fresh water and brackish, with the nature of the salts they contain. For this purpose, the principal re-agents pointed out by Bergman are recommended, and especially evaporation ; the water drunk by the islanders, and the different uses they apply it to ; mineral waters, cold or hot ; fastitious beverages, sweet or fermented ; the manner of preparing them ; the vegetable or animal substances of which they are composed ; their effects ; and, above all, of the *kava*, a liquor prepared from a root, in the islands of the South Sea, to which Anderson attributes a stupifying quality, and the property of drying up the fluids, so as to occasion the skin to fall off in scales from those who drink of it to excess.

3dly. The food. Do the inhabitants of the different countries which may be visited, support themselves with vegetable or animal diet, or with both ? Do they season their victuals ? What preparatory operations does their food undergo ? Do they make regular meals, and do they eat sparingly or in abundance ? Do they use salt with their victuals ? What comparison may be made between the roots, fruits, &c. which serve them for food, and our vegetables ? What are the farinaceous substances they use ? What species of fern is that containing a gelatinous substance, which is used

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for food by the inhabitants of New Zealand? Have they no aliment in the form of powder, upon which they feed during their voyages? From what plant is it procured, and what process does it undergo in the preparation? Are there not vegetable substances to be found by diligent search, unknown to the natives, and which may be used for food? May there not be some vegetables from which a saccharine substance might be obtained, analagous to that of the sugar-cane, and with more facility and less expence?

4thly. The habitations, their form, extent, openings, exposure, the soil on which they are situate, the materials of which they are constructed, the nature of the shelter they afford, their dryness or humidity; whether the inhabitants retire within them during the night, and throughout the whole year, or only at certain seasons; how much of the day they spend in them; in what number they collect together in them, with regard to the space occupied; whether they sleep on beds, on mats, or upon the ground; and whether there be not some islanders who have no habitation, and who live always in the open air: the forms and materials of their clothing, &c. All these should be objects of inquiry.

5thly. The occupations of the two sexes, their labours, exercises; in what respect they preserve or impair the health of the inhabitants.

6thly. The passions, manners, prevailing character of each nation; the practices made use of to promote the secretion of different humours, as that of chewing tobacco, betel, or any analogous substance, or smoking, using frictions, unctions, baths cold or hot, vapours dry or moist, with the influence of these various usages, and particularly of the oily unctions and of tatooing, upon the perspiration.

§ III. OF DISEASES.

THE diseases peculiar to the climates which will be visited, may furnish important observations. Cook and Anderson have noticed, although with but few particulars, those which prevailed in the Friendly and Society Islands. They observed in the inhabitants of the former a blindness which was owing to an imperfection of the cornea; tetters, and other herpetic eruptions, which leave spots upon the skin, and affect one half of the natives; large dangerous ulcers, of a corrosive nature, often occasioning the loss of the nose; indurated swellings, so as to be without feeling, of the arms and legs; and tumours of the testicles. Anderson, from whom these observations are quoted, has pointed out five or six disorders he saw at Otaheite; but has only spoken at large of the dropsy, the *sesui*, or indurated swelling, and the venereal disease, which the crew of capt. Cook carried thither in his two former visits.

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It appears that the disorders to which the islanders are most liable are those of the skin.

Although Anderson saw no sick in their beds, and though the islanders of the South Sea for the most part neglect to treat their disorders in any regular way, the navigators are requested to attend carefully to the following particulars, several of which relate to disorders considered as new in our climates:

1st. Are there any acute diseases or fevers among these islanders? Anderson has only mentioned chronical ones. Among the former are there any eruptive disorders? Does the small-pox exist there? What are the circumstances of its progress, and what ravages does it make? Do the people, who may be visited, know any thing of inoculation? Is there any climate where this disease is endemical? Are the people attacked with contagious or epidemical distempers? Have they experienced the scourge of the plague? Are the children subject to the tetanus, and to the croup? An accurate description of all the disorders of this class is requested, and more especially what relates to their crisis, and what affinity they bear in their progress and nature to the same maladies in our climates.

2dly. Among the chronic disorders which prevail in the South Sea, those of the skin appear to be the most common. To what may the great number

of tetters and ulcers, observed by Anderson, in these islands, be attributed? Are they owing to the oily unctions, or to the stinging of insects? Do these engender in them frequently, as is commonly the case in ulcers of warm climates? Are not the ulcers which corrode the face, and destroy the nose, cancerous? Are the indurated swellings of the arms and legs, described by Cook, to be imputed to this distemper? Are the inhabitants subject to the leprosy, to the morbus pediculofus, and to the dracunculus, or Guinea worm?

3dly. Does the venereal disease exist in the countries visited, whether continent or islands? Does it appear to be natural, or to have been imported thither? What remedies do they make use of to cure it? In what state is it in the Friendly and Society Islands, whither it was carried by Cook in his first voyage? By what symptoms does it manifest itself? Is it true that the islanders are strangers to the gonorrhœa?

4thly. Is the scurvy endemic in any particular countries? What are its symptoms in the warm or cold countries? What ravages does it make, and what remedies do they apply to it?

5thly. Are the rickets, and the deformities which take their rise from this disease, known in the countries to be explored? Are nervous, convulsive, or spasmodic disorders, and especially the epilepsy, to be found there? Are the children sub-

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6thly. Are there certain men or women particularly appointed to take care of the sick? What remedies and what methods of treatment do they adopt? Are there any hospitals, or do they separate certain classes of diseased persons from society?

§ IV. OF THE MATERIA MEDICA.

IT appears, according to the relation of Anderson, that the priests are the only inhabitants of the South Sea Islands who take upon themselves the charge of curing the sick, and that for this purpose they make use of certain juices of herbs, but he gives no description of these plants, or of the other preservatives to which they have recourse against disorders of the skin, ulcers, swellings, dropsies, &c. The women recover themselves from the effects of child-birth, according to this naturalist, by sitting upon warm stones, wrapped up in two pieces of cloth, between which they lay a species of mustard; this remedy makes them sweat profusely, it does not succeed however with venereal patients. These people therefore have but an imperfect knowledge of the virtues contained in the remedies which nature offers them; they are even unacquainted with any thing which can operate as an emetic. It remains for the navigators therefore to make experiments on the qua-

lities of plants, to ascertain their taste, and obtain knowledge relative to their other physical properties, not only in the islands of the South Sea, but in all other countries where they may land. For this purpose the following particulars are recommended to their attention.

1st. Examine the taste, the smell of the roots, woods, barks, leaves, flowers, fruits, and seeds of the vegetables in the countries but little known, and compare them with the different vegetable substances employed in Europe as medicines, and make similar experiments upon the sap which exudes from trees, as well as upon animal substances.

2dly. Observe the different remedies which are applied in hot countries to the diseases which afflict the inhabitants, and describe even the superstitious ceremonies which are often the only medicine known amongst barbarous nations.

3dly. Try the effect of decoctions of some of the emollient, aromatic, and acrid plants, in those disorders of the skin to which the inhabitants are liable.

4thly. Let mercury be applied in friction in cases of the venereal disease, among the inhabitants of the South Sea Islands, and let them be assisted with the means to rid themselves of this cruel scourge; above all observe the effects of mercury upon these people.

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5thly. Endeavour to discover whether some sudorific vegetables of these islands may not have an anti-venereal virtue, such as, particularly, the *lobelia syphillitica* (*rapuntium Americanum flore dilute cæruleo*), and the *celastrus inermis*, of Linneus.

6thly. Examine whether there do not exist in some of the hot countries, plants analogous to the cinchona, simarouba, ipecacuanha, camphor, opium, &c. and whether the islands contain any emetic or purgative plants likely to be of use.

7thly. Get information, and make observations on the properties of the anacardium, which in Louisiana is reputed to be a cure for insanity; on the virtue of the *telephium*, and of the *gramen marinum*, or sea herb, which the Greenlanders prefer to scurvy-grass for the cure of the scurvy; upon the cortex winteranus, the root of Belaage*, of Columbo†, and that of Juan Lopez‡.

8thly. Endeavour to learn which are the tribes that poison their arrows, what substances they use for this purpose; the nature, the description of the plants from which they extract the venomous juice, and especially the remedies they administer to prevent the deleterious effects of it: inform yourselves also whether salt and sugar may

* At Madagascar.

† Island of Ceylon.

‡ Coast of Mosambique.

be considered as an antidote against the wounds made by these arrows, as there is some reason to think, from the experiments of Condamine.

9thly. Take notice of the animals, and especially serpents and venomous fish, and endeavour to find out the cause on which this dangerous property depends in the latter, and if there be any means by which it may be prevented.

10thly. Inform yourselves carefully of the remedies, internal or external, which are esteemed specifics in the diseases of the different people; describe the nature of these specifics, the manner of preparing and taking them, their doses, their effects, and the period of the disease during which they are taken or applied: it is by this means we have learned from the Peruvians the valuable properties of the cinchona.

11thly. Collect in a particular herbal, and distinct from that of botany, such plants, or parts of plants, as are used for aliments, remedies, or poisons, in the various countries which may be explored.

§ V. SURGERY.

Of diseases and chirurgical operations.

ANDERSON remarks, that surgery has made a greater progress among the islanders than medicine,

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cine, as must necessarily be the case among a people subject to few diseases, but liable, in common with all men, to external accidents. Captain Cook makes mention of a woman of Le-fooga, in New Zealand, who performed the office of an oculist: she dressed the eyes of a child with two wooden probes, which she rubbed upon their membranes, even till the blood ran. It appears that the natives of the Friendly Islands have no great dread of wounds, since they inflict them on their own heads voluntarily to express their grief; they also cut off the little finger with an axe made of stone when they are ill, and one of the joints of the same finger when their chiefs are so. Many of these islanders are observed to have a little finger wanting on one hand, or even on both. This practice is, doubtless, allied to their superstition: they also make incisions in different parts of the body, and especially in the legs. Anderson further remarks, that they are very bad surgeons, as he saw an arm awkwardly amputated, and a dislocation of the same part, which was not reduced many months afterwards. Nevertheless, these islanders, according to him, can judge when wounds are mortal, and know how to apply splints to fractured limbs: they can moreover introduce into wounds where there are splintered bones, a piece of wood to supply the place of bones brought away; and Anderson saw cicatrices from the

the thrust of a pike, which evinced the cure of wounds that would have been thought mortal in Europe. Lastly, the class of men in Otaheite, that are called *tahoua*, make an incision on the prepuce of infants, which operation they perform at one stroke with the tooth of a shark; they cure the swelling which supervenes, by applying hot stones to the part. The facts which appear important to be collected relative to this part of surgery, may be reduced to the following:

1st. Are dislocations, fractures, ruptures, and chirurgical maladies in general, very common among people who live in a state of nature?

2dly. What means do they employ for curing these different disorders?

3dly. Have they particular instruments? Of what form are they, of what materials, and how used? Let some be purchased, and a collection made of them.

4thly. Are circumcision and infibulation practised? If so, how are the operations performed?

5thly. Are there any men or women to whom the separate care is delegated of treating particular chirurgical disorders, as those of the eyes, the ears, the teeth, the skin, child-bearing?

6thly. What are the form and nature of the weapons they make use of in their battles; those of the

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the wounds they inflict, and the manner in which they treat and cure them?

At the Louvre, the 31st of May, 1785.

(Signed) MAUDUYT, VICQ-D'AZYR,

DE FOURCROY, & THOURET.

I certify the present copy to be conformable to the original lodged in the office of the secretary of the society of medicine, from which I received directions to forward it with all speed to the Minister of Marine.

(Signed) VICQ-D'AZYR, Perpetual Secretary.

SKETCH

Of experiments to be made for preserving the water on ship-board from corruption, communicated to M. De La Pérouse, captain of the navy, about to make a voyage round the world, by M. L'Abbé Tessier, of the academy of sciences, and of the society of medicine.

One of the greatest inconveniences attending navigation is the corruption of fresh water in long voyages. Different means have been proposed for avoiding this evil: the object of some of them has been to render sea water potable, which would undoubtedly be advantageous under many circumstances, but the processes have been found to be expensive and troublesome: others consisted in preparations which tended to prevent the corruption



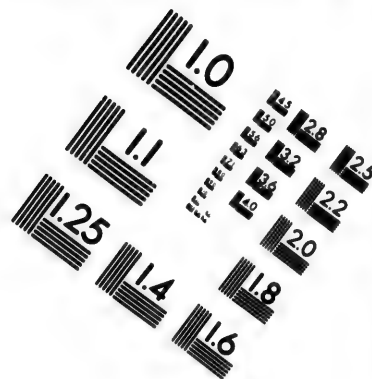
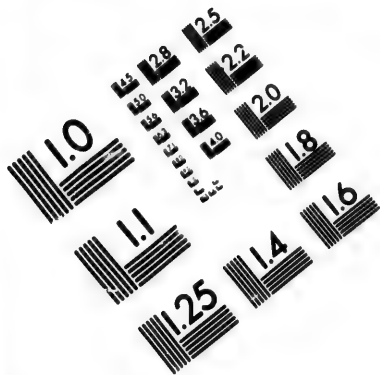
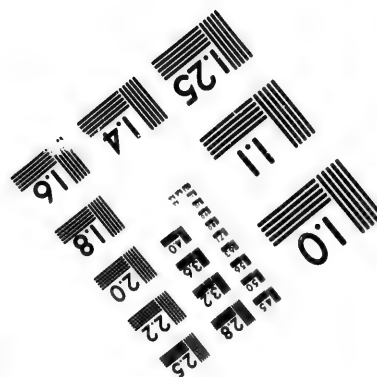
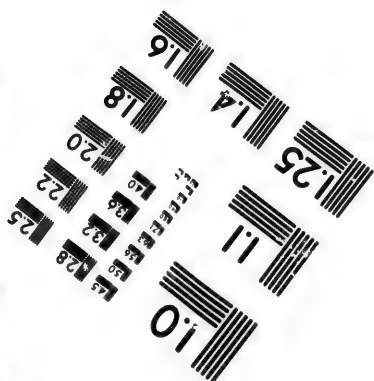
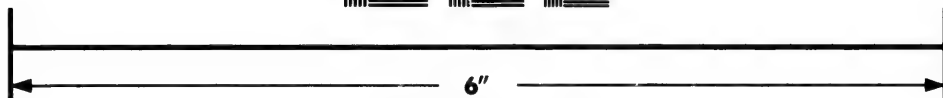
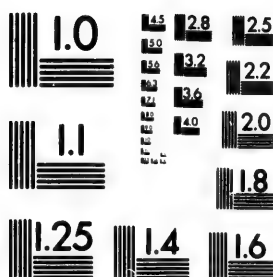


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ruption of the fresh water; this last appears to be the most simple, because it neither requires labour during the voyage, nor the conveyance of fuel.

I do not examine whether many of the experiments formerly proposed relative to this useful object have been made with that scrupulous attention, which a disinterested and sincere desire to ascertain a point so valuable to mankind ought to prescribe. The voyage of M. De La Pérouse round the world offers the most favourable opportunity for making experiments of this kind. He will necessarily sail through every latitude; the love of truth and science animates him; his own knowledge and experience will be united to those of the natural philosophers who accompany him; the result, which he will present on his return, may therefore be relied on.

It is with this view, that I have here laid down a sketch of experiments, simple and complicated, some of which it appears to me have not yet been tried.

From all that I have perused in the writings of navigators, and from conversations with a great many naval officers, it appears, that the water taken on ship-board corrupts only because insects form in it, which, in certain degrees of latitude, where the temperature is very warm, hatch, die, and putrify. These insects owe their birth

to eggs deposited either in the water before it is shipped, or in the casks containing it. Water that is taken on board during winter, or that is drawn from springs, is less susceptible of corruption than that which is shipped in summer, or than that taken from rivers; these differences depend on the insects which deposit their eggs always in summer, and in certain waters, rather than in others; it is known also, that wood often serves as a nidus to the eggs of these animals; it is possible, therefore, that these eggs may exist in the wood of which the casks are made. I consider it of importance to be assured how far this may be a fact.

In consequence, I am of opinion first, that the water alone should undergo some preparation; next, that the casks alone should undergo one; and lastly, that the water and the casks jointly should undergo a preparation. It will be discovered by these means, whether the eggs are all in the water, or all in the casks; perhaps they penetrate into these latter only during the voyage. The following experiments will further determine this, and point out the best preservative. The first care is to be satisfied of the state of the fresh water when embarked, by examining its weight with the hydrostatical balance, its temperature with the thermometer, its purity or divisibility, by the facility with which it boils dry pulse and

and dissolves soap: the spring or the river whence the water is taken should be noted down, as well as the hour of the day, and the season of the year. The individual hydrostatical balance and thermometer, employed in this experiment, should be those taken on board, as well as parcels of the same pulse, and of the same soap to be used in other similar experiments. While at sea, choose twenty hogheads, or casks, each of equal capacity, and in all respects like those which will contain the rest of the fresh water: this number of casks, for experiments, ought not to excite surprize or alarm, when it is considered, that the water preserved in them will all be drunk in the course of the run; that in any case it will not be inferior in quality to the ordinary shipped water, and that it may be deducted from the quantity of casks proposed to be carried out. The casks for the experiments must be made of the same wood, and hooped the same; they must be placed in the same part of the ship as the others are, and without any particular precaution.

First experiment. The water with which two of the casks are filled, must be previously exposed to the fire, where it must be boiled for half an hour; there are no insects eggs can bear this heat without perishing. This method, simple as it is, has never been made use of as far as I

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know; the sailors are in the practice of partially doing this, by sometimes throwing red hot balls into the water which they take at certain watering places. Upon one of the casks may be put No. 1. E. B. and upon the other No. 2. E. B. that is to say, *eau bouillie* (boiled water).

Second experiment. The inside of two casks must be impregnated with quick lime, dissolved in boiling water, and this operation repeated two or three times; for this purpose, the brush used must be pressed strongly against the joints, in order that the lime water may insinuate itself the further into them: it will be easily conceived, that this soaking can only take place, when the casks have not both their bottoms in, and that it is necessary to impregnate in the same manner the inner side of the staves which form the second head before it is replaced. The barrels must then be filled with water, which has not been boiled. These may be marked on one, No. 1. E. C. S. and on the other, No. 2. E. C. S. that is to say, *eau chaulée simplement* (simple limed water).

Third experiment. This will consist in combining both the former: two barrels, with their inner surfaces previously impregnated with lime, filled with boiled water, as in the preceding case. Upon one put No. 1. E. B. C. and on the other, No. 2. E. B. C. that is to say, *eau bouillie, chaulée*, (boiled water limed).

Fourth experiment. Two other barrels, being equally impregnated with lime, are to be filled with boiled water, to which add spirit of vitriol, in the proportion of four ounces to two hundred and fifty pints of water, Paris measure. On one put No. 1. E. B. C. V. and on the other, No. 2. E. B. C. V. that is to say, *eau bouillie, chaulée, vitriolisée* (boiled water, limed, and vitriolated).

Fifth experiment. It will be sufficient to put into two other barrels, fresh water, without having made it boil, mixing four ounces of oil of vitriol, with two hundred and fifty pints of water; neither should these barrels have been made to imbibe the lime. Upon one put No. 1. E. S. V. and upon the other, No. 2. E. S. V. that is to say, *eau simple vitriolisée* (simple vitriolated water).

Sixth experiment. Two barrels will contain boiled water, to which must be added four ounces of spirit of vitriol, without any other preparation. Upon one put No. 1. E. B. V. and upon the other, No. 2. E. B. V. that is to say, *eau bouillie, vitriolisée*, (boiled water, vitriolated).

Seventh experiment. Two casks are to be covered over on their outsides with tar, which are to be filled with boiled water, without their having been impregnated with lime within. Upon the one, put No. 1. E. B. G. E. and upon the other, No. 2. E. B. G. E. that is to say,
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Eighth experiment. Two casks are to be impregnated with lime, as in the second, third, and fourth experiments, filled with boiled water, and also tarred on the outside. Upon one put No. 1. E. B. C. G. and upon the other, No. 2. E. B. C. G. that is to say, *eau bouillie, chaulée, goudronnée*, (boiled water, limed, and tarred).

Ninth experiment. Only tar two casks on the outside, and let them be filled with simple water, which has not been boiled. Upon one put No. 1. E. S. G. E. and upon the other, No. 2. E. S. G. E. that is to say, *eau simple, goudronnée extérieurement*, (simple water, tarred on the outside).

Tenth experiment. Fill two casks with simple water, without making them undergo any preparation either within or without. This experiment is a standard of comparison for all the others.

It is to M. De La Peyre, surgeon in the navy, that the idea of impregnating the casks internally with lime belongs. I took the hint of the process from him, which I have varied and corrected, as much as I thought necessary. The addition of the spirit of vitriol to the water has been known a long time.

It is necessary to observe, not to boil the water before the casks are ready to receive it, and

then to fill them as soon afterwards as possible. If any time were lost, other insects might deposit their eggs, to the frustration of the experiment.

It is obvious that all the casks should be closely bunged up.

When from the heat, the rest of the ship's water shall begin to corrupt, every one of the experimental casks should be examined at the same time. All of them should be tasted, and examined whether they have any smell; the transparency of the water should be noticed; it should be weighed in the hydrostatical balance; a thermometer should be introduced into the casks, to ascertain their temperature; an equal quantity of dry pulse, such as had been made use of for the same purpose before sailing, and which shall have been preserved for this purpose, should be boiled in them; and, lastly, an equal quantity of soap, such as has already been used, should be dissolved in equal quantities of water from every one of them.

It will be necessary to observe, with great attention, whether insects be formed in them, and of what species they are; and to watch their metamorphoses, and the gradations of corruption and putrefaction in the water: it will be proper even to preserve some of these insects in brandy, so as to bring them back to France.

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If the wants of the ships companies will allow of it, the other casks remaining of the ten experiments, should not be touched before arriving in a different climate, and in another latitude where the common water will corrupt; in this second case, they must be examined as in the former.

An exact account must be kept, in the form of a legal deposition, of all that may happen, or be remarked in these experiments. This deposition will be signed by M. De La Pérouse, by his officers, and by the natural philosophers who will be on board.

If this plan of experiments be deemed interesting, it will be conceived how much it is to be desired, that each of the ships M. De La Pérouse will command may repeat it at the same time; they may separate and run through different tracks; double observations will reciprocally confirm each other, and carry the thing to a demonstration: there ought to be the less reason to object to it, as the water of the experiments will be as good as the other, and it will not occupy an useless place in the ships, since it may be drunk.

I request M. De La Pérouse to sign two copies of this sketch, which will be signed by myself; he will keep one, and I the other; this will be a testimony of the engagement he enters into with the public, to take upon himself experiments, which

may turn to the advantage of navigation : at least they are proposed with this intention.

Rambouillet, the 19th of May, 1785.
(Signed) Teflier, and La Pérouse.

MEMOIR

For directing the gardener in the occupations and duty of his voyage round the world, by M. Thouin, first gardener of the botanical garden.

The mission of the gardener, who will accompany M. De La Pérouse in his expedition, having for its object the carrying such vegetable productions of Europe to the inhabitants of the places he visits, as may be useful to them, and to bring back from those various countries the vegetables proper for enriching Europe ; it has been thought proper to divide this memoir into two parts.

FIRST PART.

Choice, nature and culture of the vegetables which may be transported from France.

Of all the presents which the munificence of the King would make to the inhabitants of the newly discovered countries, vegetables fit for the
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nourishment of man are, without dispute, those which will procure them the most lasting benefits, and the most proper to promote their happiness.

The choice of these vegetables ought to be made from among our leguminous plants, and our most valuable fruit trees; the roots and fruits which stand in need of no preparation previous to their use ought to obtain the first consideration, and those which only require cooking without moisture should obtain the second. It is within these limits we should confine the presents about to be made to a people, who, not having convenient vessels for boiling their food, could make no use of herbs and fruits which required such preparation. It is under these considerations that the lists have been formed, which are to be found at the end of this paper.

It is necessary still to observe, in order to diminish the expence of the purchase, not to carry out the seeds of those kinds of vegetables which are only preserved by a careful and delicate culture. These seeds, left to themselves in climates so different from those they have been accustomed to, or at most to a rude culture, would soon return to their primitive state, and therefore only serve to encumber the ship.

The choice being resolved on, it is proper to determine in what way it will be most profitable to convey these vegetables.

There cannot be a doubt but the state of seed, at the same time that it is the least expensive in the purchase, is the most convenient for carriage; it is also the most sure in general, for multiplying the productions of one climate in another; but it requires a choice in the seeds, attention for their preservation during the voyage, and pains to sow them advantageously in the different places to which they are destined.

The most scrupulous attention must be had not to purchase any but the last year's produce, well grown, and which are perfectly sound: those which appear shrivelled, or eaten into by insects, must be carefully excluded, not only as useless, but also as injurious to the others.

The seeds thus chosen will be divided into two parts: the first comprehending all those which only need to be defended from the contact of the air, and from moisture, in order to their preservation; the second will be composed of all the seeds which it will be necessary to lay in sand, or in earth, to preserve their vegetative power, such as the stones of our fruit trees, the seeds of several umbelliferous plants, &c.

The first ought to be preserved in brown paper bags, and afterwards enclosed in tin boxes, folded very carefully; the second will be placed in alternate layers of earth or sand, in tin boxes which must be closed up exactly.

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These different boxes, thus shut up, ought to be enclosed in solid cases, which should be covered with waxed cloth; they ought to be placed in a part of the ship the least accessible to moisture, and the most sheltered from extreme heat or cold; they must be left in this situation, until the proper season for sowing the seeds.

As it is probable, that the sowing will not be confined to one place, and that it may be presumed New Zealand, the Sandwich islands, as well as the Friendly and Society Islands will have their share of these presents; it is conceived, that to avoid letting the air into such seeds as will only be sown at very different periods, it would be more convenient to divide the whole of the assortment into four parts, so as that each one of them might be contained in a chest, which would only be opened at the time of sowing. By this, an inconvenience very prejudicial to the seed will be avoided.

Order being absolutely indispensable in a collection of this nature, the gardener will take care to write upon each packet the name of the seed contained in it, to enter each in a catalogue as he packs them up in the tin-boxes, to number them agreeably to his catalogue, and afterwards to place them by order of the numbers in each of the great chests intended to contain this assortment: by these means he will at all times be

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enabled

enabled to find readily, and without any trouble, the articles for which he has occasion.

It is scarcely possible to trace in a precise manner any plan for the sowing of these seeds, and their cultivation in the places which will be run over so rapidly; all that can be said will be reduced to general observations, the application of which must be left to the knowledge of the gardener.

On arriving at any place where it is proposed to sow any of these seeds, the first care of the gardener should be to gain information as to the temperature of the climate, to examine whether the productions of the soil, especially the annual plants, are in a state of growth, maturity or decay. These observations ought to direct him in the choice of the seeds which will best agree with the climate, and in selecting the most favourable exposures.

In the very cold countries, if the arrival be in autumn or in winter, the sowing the seeds of annual plants which would not germinate, or would be destroyed by the first frosts, must be given up; all that can be risked are a few seeds of trees, such as apple kernels, grape stones, and stones of different fruits, &c.; because these seeds, which will not appear above ground till spring, may be expected to endure the frost: if the arrival be in spring or summer, nothing then will stand in the way of sowing all the seeds of those species of plants

plants, which may appear congenial to the climate, observing as much as possible to choose that soil and situation, which are most convenient for them.

In hot countries, in general, the drought is one of the inconveniences most injurious to the propagation of vegetables; it is requisite, for the safety of the seed, to choose moist soils, the borders of rivers, and low lands, in the vicinity of the sea: shady places ought to be preferred for the establishment of nurseries.

The places fixed upon for seed beds being laid out, it is necessary that the gardener should have them dug, and that he prepare the ground for the reception of the seeds he thinks proper to put into it; after which he will sow the seeds, and superintend their culture as long as the period of the ships stay will permit him. If he could inspire a few of the natives with a fondness for these pursuits, and could succeed in giving them to understand the value of such productions, he would doubly fulfil the benevolent intention of his mission.

Independently of the construction of seed beds, the gardener may try another method, which if it do not produce great advantages, will be attended with very little trouble; and that is, every time he is disposed to walk up the country, to fill his pockets with a mixture of various sorts of

of seed, which he might scatter, as he goes, in those places he thinks they will be most likely to succeed; a few strokes with the dibble will suffice to bury the seed, and stir the earth about it.

Not to omit any of the means which may render his voyage useful and agreeable, the gardener should keep an exact journal of all his proceedings: the period of his sowings, the appearance of the young plants, the progress of their vegetation, and their results, when he can observe them, will furnish us with points of comparison which may carry our own culture to greater perfection.

As there are many vegetables, which may be very useful to the inhabitants of the countries now to be visited, but of which the seeds have not the quality of perpetuating our valuable varieties the reward of a long culture, such as the greater part of our fruit trees, it will be proper to try to carry a few individual plants of each species, this will be the object of the next chapter. Notwithstanding which, the carrying out abundance of the seeds of these trees ought not to be neglected, they will furnish wild fruits, which, like those our ancestors fed on, may be employed in the nourishment of people still less civilized than they were, and may procure them a fund of riches, from which their improved industry may in the end draw the greatest advantages.

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*Precautions to be observed in the carriage of
growing plants.*

The present season does not allow us to take up the vegetables or shrubs which are in the open ground, and at the period of their most luxuriant vegetation; but at Paris it will be easy to find in pots every thing which in the country is cultivated in the open ground; it is necessary then to be furnished with these articles from our nursery men; the almost certain success will compensate for the trifling expence of carriage to the place of embarkation.

The carrying of trees cannot be done with any hope of success, except in boxes, wherein they may vegetate during the voyage. It is necessary for that purpose to be furnished with a box forty inches long, by twenty broad, and as much in depth, with a dozen holes bored through the bottom for the superabundant water to run off. Its upper part must be composed of a triangular frame, upon which lattice work of iron wire must be fitted, with glazed frames, and window shutters, to keep up a free circulation of air, increase the warmth, when necessary, and keep out the cold.

The selection of the species being made conformably to the statement drawn out and placed at the end of this memoir, it will be proper to purchase

purchase only young plants, and such as are branchy to the end of their stalk. Care must be taken that they are healthy, vigorous, and their grafts are as near as possible to their roots. When as many are collected as it is possible to put into one box, they must be packed up as follows.

At the bottom of the box, and upon the holes bored for the running off of the water, must be placed small tiles to prevent the earth from being washed away by the waterings; after that there must be laid down a bed of stiff earth, three inches in depth, pressed lightly down. It is upon this bed, that the first stage of young trees, chosen from among the largest, must be laid, and especially those which, like fig-trees, vines, cherry-trees, &c. are not liable to injury from their stems being deeply buried: the clods of earth which are taken out of the pots with these plants must be laid together, as close as possible, and the spaces filled up with earth, composed of heath mould, which must be pressed and spread as well as possible, so that this first rank may form one solid mass; a bed of heath mould of two inches depth must cover the first stage. The arrangement of the second must be managed in the same manner. It ought to be disposed as the first, clod must be laid against clod, the stems of the highest in the middle, and by gradation the lowest towards the edges, all the

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the interstices must then be filled up with heath sand, without regarding the burying the stems of the trees in the under bed, provided three or four of their shoots are above ground. Lastly, the whole mass must be compressed, either by beating the box against the ground, or by forcing it down with the hand, so that no vacancies may remain, and neither the jolting of carriages, nor the rolling of the ship occasion any derangement.

In order to be still more sure of this advantage, a bed of moss might be laid on the surface of the upper bed, and that again covered with fresh wheat straw, both together of the thickness of an inch and a half, which might be kept down by a frame crossing the box between the stems of the young trees, without touching them, and nailed upon two ledges, fixed in the inside, the length of the two sides.

The plantation being thus finished, the trees must be pruned in such a manner, that the branches, the nearest to the wire work, will be about an inch or two from it; afterwards the whole mass of this box must be well watered, and, a few days afterwards, it may be sent off to Brest by the carriers.

In order to diminish the loss of the moisture in the box, which it will be impossible to renew during a journey of twelve or fifteen days, it will be proper to close the lateral shutters, but to leave

leave the two small ones at the extremities open, so that the air may be renewed, and the plants preserved from decay.

On the arrival of the boxes at Brest, the first care of the gardener should be to open them, to raise the wire lattice, and to cut away the abortive shoots; afterwards he should probe the earth to examine its state of moisture, and to remedy any little disturbance the carriage might have occasioned. After the privation of free air that these trees will have experienced, it will not be prudent to expose them suddenly to the sun; it will be more advisable to defend them from it, either by placing the boxes in the shade, or by covering them with canvass for a few days.

The care of the boxes, and nursing of the trees, during the voyage, will be confined to the watering them, as often as necessary, and preserving them from extreme heat as well as from great cold, either by covering them with canvas during the day, and giving them as much air as possible during the night, or putting them down between decks in the cold latitudes; besides a little use of the pruning knife may be necessary to shorten, now and then, the too vigorous among them which might hurt their neighbours.

The trees, arrived at the place of destination, must be taken out of the boxes, with the earth about the roots, in the most careful manner possible,

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possible, and planted in such aspects, and in such soil, as will best agree with each of them; and during his stay the gardener will watch over their preservation. If the whole of the package be not intended for the same place, he will only take out of the box such individual plants as he proposes to set, and will fill their places with such productions from the country as he may think useful to Europe. The judgment of the gardener must be relied on for making the natives of the place understand, that these trees are presents, and that they ought to watch them carefully on account of the benefit they will derive from them. This is nearly all that can be said concerning the first part of the gardener's commission: we shall now speak of the second.

SECOND PART.

Of the gathering such vegetables as may be useful to Europe, and of their preservation during the voyage.

THESE collections should comprise, 1st, The seeds, 2dly, the bulbs and fleshy roots of vivacious plants, 3dly, the saplings of interesting trees, the seeds of which are not to be procured.

The seeds should be harvested when there is a choice of them to be had, and in their perfect maturity; but as it often happens, that the short stay

stay made on an island leaves no opportunity to delay the gathering of seeds which are not perfectly ripe, while it is necessary, nevertheless, not to dispense with the gathering them; there is an advantageous mode of proceeding, but in such a case an indispensable precaution is to be observed.

The herbaceous plants, of which the seeds are found to be not above three parts, or even two thirds ripe, it will be necessary to have them plucked up by their roots, afterwards tied in trusses, and in that form conveyed to the ship, where they must be suspended in a place defended from the sun and from moisture; there cannot be a doubt, but that a part of the seeds of these plants will ripen in the space of six or eight days; they may then be gathered and put up.

If it should happen, that some interesting plants, from which it is ardently desired to obtain seed, be found at a period when their seed is but just fecundated, there is no occasion to despair of succeeding. In this case, it is proper to take up the plants with the roots, and the clods of earth about them, and to plant them in baskets. These baskets should be closed with their own covers, or with mats, for the first few days; the plants should be watered night and morning, and by degrees uncovered; the ripening of the

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seeds will thus be effected during the voyage, and there will be no cause to regret having lost an opportunity, which might never again occur, of procuring to Europe a precious vegetable.

If, through good fortune, perfectly ripe seed be met with, still the manner of gathering it in is not a matter of indifference, with respect to its preservation. Not only does it require care to avoid shaking out the seeds, but it is necessary also to gather them in their chaff and with their peduncles. Those which grow in husks, pods, and capsules, will remain in their seed-vessels which it will be even necessary to tie, in order that they may not open during the voyage; the same will be necessary with regard to cones, and in general all dry fruits. The small seeds which grow in spikes, in panicles, in whorls, and in bunches, must be gathered quite entire with stalks of five or six inches long, and twisted different ways, in order to intercept all external communication of the air with the germ of the seeds.

To preserve seeds during so long a voyage, and in such different latitudes, requires indispensable precautions. It is certain, that seeds left in their cups and capsules will keep better than others; but it is requisite, that they be very dry, as well as the other parts about them, and that afterwards they be freed from insects, and the eggs of insects,

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which

which might be hatched during the voyage, and devour the seeds without being perceived. Some hours of exposition to an ardent sun will suffice to produce the first effect; and if imperceptible insects be suspected, or eggs shut up in the coverings of the seeds, by taking the precaution to place them under a bell in which a little sulphur is lighted, the vapour will kill them in a few minutes. Assured that the seeds do not contain a superabundant moisture, or insects, they may be folded up, each species by itself, in strong paper which has not been sized. Upon each of these packets must be put a number, corresponding with a sample of the plant, or tree, from which the seed has been gathered; afterwards these different packets must be ranged in a tin box, pressing them as close as possible, as much to save room, as to prevent the effect of the rolling of the ship, when by not being well confined, they might rub together and destroy each other. The box filled, and shut close with its lid, should be foldered as it were hermetically; and the article it contains superscribed thereon, as, for example: "*Seeds gathered from such a period to such a period, in such a place.*"

When several boxes like this are gotten together, they are to be packed up in a strong wooden chest, which must be covered with oil-skin, with
a ticket,

a ticket, or label, like the former, on the outside.

The naked, or uncovered seeds, of the bulk of hazel nuts and above, will require another preparation. It is proper, immediately after they are gathered, to leave them exposed to a free air, in a safe place, during a convenient time, to sweat out the too abundant moisture they may contain, and at the same time to perfect their maturity: after which they must be examined, in order to reject the illformed, the abortive, or those perforated by insects. There must then be disposed at the bottom of a tin box, of a sufficient size to hold twice the quantity of the seeds, a bed of earth one finger thick; upon this firmly fix a bed of seeds, kept at some lines distance one from another, these seeds must again be covered with six lines of earth, and another bed of seeds disposed thereon as before; and so continue one after another, till within a fingers breadth of the upper part of the box, which must be left to admit the last stratum of earth, and this ought to be strongly pressed down by the lid, which must afterwards be soldered.

The mould used for this operation should be neither too dry nor too moist, but such as is found on the surface of the earth, when it has not rained for eight or ten days. Too dry, it might absorb the moisture necessary to preserve the

feeds; too wet it would occasion them to rot. It is on the just medium between these two extremes, and proportionally to the nature of the feeds, that the success of this kind of package depends.

There is no need to mention, that it is necessary, after folding the box, to put a ticket upon it, signifying what is contained in it, and corresponding with the herbal and with the gardener's journal; the importance of this precaution is too obvious.

The naked feeds of a small size, below that of a pea, may be put at random with the earth, without observing any regularity with respect to beds or layers, but in all the other particulars arranged as the preceding.

The feeds inclosed in fleshy calices, in berries, or in pulpy fruits, such as figs, gooseberries, apples, peaches, &c. ought to be taken thereout when the fruit begins to rot, a sign of the perfect maturity of the seed; they are to be spread out to the open air, after which they may be shut up in tin boxes, with earth, as has been before directed.

To vary the chance, and leave nothing to hazard, it might, perhaps, be suitable to pack up a portion of each species of those feeds which come enclosed in capsules, pods, &c. with earth, and in the same manner as directed for naked feeds.

seeds. This precaution might, above all, be very fit to be taken in the harvest or seed time of the beginning of the voyage: the processes for preserving the seeds cannot be too much varied during so long a voyage.

So far, all the boxes which have been recommended to be sealed up as fast as they are filled, ought not to be opened in any case until after the period of arrival in France, when it may be thought proper to sow the seeds: they will require no other care during the voyage than to be disposed of in a part of the ship the least exposed to variations of atmosphere; they ought, however, to be preserved from too much moisture, and above all, from too much drought.

Among the seeds, there is no certainty, that there do not exist many the germination of which it is impossible to retard, such as those of the palm-tree, the myrtle, the stellated plants, and in general all those the seeds of which are filled with a horny substance, and which have but a very small embryo lodged in a little cavity; these families are numerous in fine trees, the greatest part useful. The very small success met with in the seeds of these trees, which have been brought to us with numerous precautions, appear to prove this impossibility; it is expedient then to employ other means for procuring these interesting objects. We think it would be proper to sow the seeds at the

same time as they are gathered. For this purpose it would be necessary to have a case, the dimensions of which may be made proportional to the quantity of seed intended to be put into it, but which must not have less than twenty inches of depth. This case must be filled with a light and rich mould, taken from a spot covered with grass, at the time it is wanted; the seeds must be sown very near each other, at different depths; the largest, such as the cocoas of the Maldivia Islands, in eight inches depth, and the most delicate in four lines. There must be a space left of about two inches, between the earth and the superior edge of the case, to add a bed of moss, which must be confined by four or five crosssticks, nailed on the edges of the case to secure the mass against the rolling of the ship. The sowings, made in cases or troughs after this manner, must be further protected from the ravages of rats, and other domestic animals of the ship, during the voyage, by a range of hoops fixed across the top, and interwoven or plaited with iron wire. The care and cultivation of these seeds will consist in keeping the earth of the cases, by waterings, in a state of moisture favourable to the germination of the seeds, in preserving them from the scorching rays of the sun, by covering them in the day-time with a coarse canvas, and above all, by preserving them from the cold in those climates where the frosts might

might give reason to dread their effects, by conveying them to those parts of the ship where they would be most safe; and lastly, by keeping down the most voracious plants which might injure the most delicate ones: two little doors made at the two ends of the wire grating, will facilitate the means of performing this operation as often as is found necessary.

It has all along been presumed, that the gardener, commissioned with the collecting vegetables, would find ripe feeds, or those nearly ripe; but it may happen, that he may meet with neither one nor the other, and being in a situation where he cannot take up the individuals in their kind, see himself in the sad necessity of quitting a spot without being able to shew to Europe a single article of its productions: in a case like this, there is a resource remaining, which he may make use of, under even the most unfavourable circumstances.

Every body knows, that the seeds of vegetables fall as fast as they ripen, and that many are washed by the rain-waters into the low places, or are carried by the winds to the skirts of woods: in gathering with a besom, in these different places, a bulk of some cubic feet of earth, taken from a considerable surface, there will be a certainty of collecting a great many feeds of indigenous plants; and these earths, enclosed in troughs or boxes, after having been properly dried, will preserve the

seed till his arrival in Europe. We have had proof of this in that which has been sent by M. Aublet from Cayenne. This traveller had embarked three-score cases, filled with trees and precious plants from that colony; the trees died on the way; but the soil in which they had been planted, being spread over a large surface of hot-beds, and covered with frames, produced a great number of plants, many of which are still preserved in our gardens. Such means may therefore be used with the certainty of success; it is indeed the only one, in certain cases, by which some species of plants can be had.

The parts of fructification of plants of the family of ferns, mushrooms, &c. are scarcely known; still less known are the seeds of these plants. Hitherto the attempts to send the stems with roots to Europe, have been unattended with success; it is probable, that in gathering up the earth where these plants grow, and mixing with it their leaves in different states, germs may be obtained, which, if well managed in their first openings or expansion, might afford us interesting plants. For this purpose, it is requisite, that the gardener, charged with the duty of sending these things to Europe, should pay the greatest attention to note in his journal, the nature of the soil he has collected, its exposition or aspect,
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the degree of moisture or dryness, and lastly, whether he took it up in a woody or open place.

To save room as much as possible, and to profit to the utmost from the sowing bare seeds, the mould which accompanies them must be chosen in the manner before directed, rather than taken at random, a circumstance which will require additional attention still, but will procure a further advantage also.

To terminate, in short, all that remains to be said on the sowing seeds here, we will endeavour to establish the proportions in which every one ought to be gathered.

It is not to be doubted, that the trees and plants which may be useful in Europe for the food of its inhabitants ought to hold the first rank in estimation; such as that species of fern the root of which serves the natives of New Zealand for aliment. The plants of use in the arts ought to hold the second; such as may conduce to the decorations of our gardens, the third; and, lastly, the fourth will comprise the plants which are only proper to have a place in the botanical gardens. The quantity collected should also be proportioned to the climate in which it is done. In countries where the temperature is analogous to that of Europe, no risk is run in gathering a great abundance, because it will be easy to make use of those seeds which require sowing in the open ground; and their

their quantity will afford the means of multiplying them in every province in France. Those in countries more warm ought to be gathered in smaller quantity, because these seeds standing in need of hot-beds and frames, and of being confined, in order to raise them, only a very few can be preserved, unless it were desired to send them to our colonies of the Antilles or of India; in that case, it is necessary, that the cultivation of these objects should be made susceptible of other advantages. Another observation not less important is, to collect a greater quantity of each species of seeds in the last years of the voyage than in the first; because it is possible, that in spite of all the pains, a part of the seeds gathered or sown in the commencement of the voyage will become impoverished before the return to Europe, and that there will be a great deal of every kind not in a condition to grow, while the harvestings of the last years of the voyage will be infinitely better.

If the touching at some of the European settlements should be foreseen, it would be advisable that the gardener made his dispositions before hand, to deposit there a bale of little packets of every species of seeds which he may have chosen, and that he join thereto a duplicate of his herbal, of which the numbers will correspond with those he affixes to the little bags of seeds he brings back to Europe. The articles thus sent may be contained

tained in tin boxes, enclosed in oil-cloth, and addressed to M. Le Maréchal de Castries, for the King's gardens.

The carriage of bulbs, bulbous roots, fleshy roots of vivacious plants, and their cultivation during the voyage.

There cannot be a doubt, but that, if these plants be met with in their state of repose, that is, when their fructification is completed, and their stems dried, it is the most favourable season for taking them out of the ground; they stand in need of no other care afterwards than to be picked from their dead branches, and that part of their covering which might be impregnated with the moisture of the air, and occasion the rotting of the bulbs; exposed to the rays of the sun for a few days they will have parted with the perspirable moisture, and may be put up in boxes, layer above layer, with fine sand, and especially that which is dry.

If these plants are only met with in full vegetation, it will be requisite to dig them up with a clump of mould about the roots, and plant them in baskets, thus cultivating them till their stalks are dead, when they may be drawn out without risk. By taking the precautions pointed out in the preceding article, their preservation may be effected.

These bulbs not being susceptible of having their vegetation retarded, at the periods when they are accustomed to grow, will shoot, do what you will to prevent them; it is necessary therefore, that the gardener be attentive to inspect, from time to time, the boxes in which he shall enclose them.—When he perceives the commencement of their entering into vegetation, it will be proper for him, to take them out, and prepare one or more boxes of eight inches or a foot at most for their plantation. They must be filled with a light rich loam inclining to sandy, which the gardener will take from a spot appearing fertile in plants, always with the view of acquiring indigenous productions, a circumstance which will multiply the chances without adding to the burden of carriage. The bulbous roots may be planted half an inch from one another, and at the depth of from one to four inches according to their size. The plantation finished, it will be well to leave a vacancy of two inches between the earth and the edge of the box, to receive a bed of long moss, or when that is not to be had, of dry grass; let battens be nailed upon the box, for securing the whole from the rolling of the vessel; and afterwards work the cover with hoops and net work of wire.

During the vegetation of these bulbous plants, the culture ought to consist in light sprinklings of water, in prunings, in assiduous attentions to defer
them

them from a too powerful sun, from heavy rains, and above all from cold.

When the vegetation of the bulbous plants is accomplished, it will be necessary wholly to deprive them of water; to accelerate the withering of their spires, by leaving them exposed to the full sun; after this nothing can hinder the taking these bulbs out of the earth and putting them up in boxes, observing the precautions pointed out for their preservation. This care must be repeated as often as the season revolves during the voyage.

In order not to lose the history of the vegetation of these species of bulbs by the numerous displacings, it would be convenient there were a leaden number attached to each by a bit of fine iron wire, such number as would correspond with the gardener's journal.

Of the choice of such living trees as it may be desirable to bring to Europe, and of the care of them during the voyage.

There ought to be a very moderate use made of these means of acquiring the productions of a distant country, and especially in the first part of the voyage. There are but very few vegetables, which, cultivated during three or four years in boxes, and experiencing almost sudden changes from one temperature to another, can resist so great a contrariety,

riety, in spite of the assiduous pains, of the details of which we are going to give a rough draft: it is therefore absolutely necessary to refrain from choosing any objects in this manner, except those which are essential, and of which the seed is not to be had.

It is requisite to select the individuals young, those coming from seed are preferable to others which grow on a sucker; it is desirable they should be healthy and vigorous, that they should be of the size of the thumb at bottom, that they should be branchy from their root, if possible; and they must be transplanted with care, so as not to break or rub the roots.

They ought to be planted in the boxes as near as possible to each other.

To do this with success the following means ought to be employed. The box, formed of sound wood, should be placed level upon tressels, which will raise its bottom some inches from the ground, in a place shaded from the sun. In the bottom of the box, over the holes which have been bored in it, must be placed cockle shells or small stones to prevent the earth from going out, and still to allow the water to run off; after this make a bed of light and rich mould, from two to three inches in height, for the whole extent of the box; afterwards, if the trees and shrubs proposed to be brought are with naked roots, they must be

put

put one against the other, placing those the first which have the largest roots, and those which are the least provided with fibres, between the other, and the closest possible to save room; lastly with the earth fine and dry, in order that it may insinuate itself between the spaces of the roots, bury the trees as high as the branches, taking care as fast as it is scattered upon the roots to spread it and work it down either by jolting the box against the ground or by using a dibble to press it in between the roots, so that every void may be filled up. This operation performed, the box must be watered, and the watering repeated several times, until the water make its way through the holes at bottom, and then cut the young trees down to about seven or eight inches above the earth; it will be adviseable to cover the surface of the earth with a bed of moss of some inches thickness, as well to preserve the moisture as to render the whole mass more firm by means of a wooden grating.

If the shrubs, instead of being naked at the roots, have a clump of earth about them, their success will be the more sure; then these clumps must be brought close together in the box, and to regain the loss of room they will occasion by their bulk, slips or suckers of trees may be planted between every one of them and be thus propagated, such as the *paletuviers*, figs, and other spongy trees;

trees; in addition to all this, seeds may be planted, as in the other, and may be arranged and managed in the same way.

The boxes thus filled with shrubs may be put on board ship; their management may be the same as in our hot houses; it will consist first in daily waterings proportioned to the need of the individual shrubs, and to the degree of heat in the climates where they may be met with; it would be better to err by defect than by excess, the consequence is less to be apprehended for the preservation of the trees. These waterings must be made with fresh water, sea water being hurtful to almost all vegetables; water must be given them every night and morning in hot latitudes, with the rose on the spout of the watering pot, in the form of small rain, so as to wash the leaves and the stems before the earth imbibes it. In cold countries, on the contrary, there is no need to water them but on pressing occasions; the warmest hour of the day must be chosen, and the water given to them by the pot without the rose, and poured on the roots of those plants which have need of it.

Independently of this care, it is important that the gardener watch the shrubs every day, that he clear away the dead leaves and the insects which might hurt them, that he clip the too vigorous shoots, that he shelter them from the cold, from the extreme heat, from the drought, from too much

much moisture; and above all, in those situations where it will not be possible to leave them the free air, that he renew from time to time the air of the boxes, by opening for some hours the two little shutters at the end; without this, the plants would blanch, and their leaves grow speckled or become mouldy, and at length perish.

The succulent plants of a mucilaginous nature, such as different species of cactus, aloes, euphorbiums, woody purslain, ficoides, &c. may be brought in their natural state, after the same manner as the shrubs; but it is necessary to keep them apart, as they require a separate management. The earth, in which they are to be planted very near each other, ought to be of a compact nature; six or eight inches deep at the bottom of the box will be sufficient to receive them: instead of moss, there must be put over the earth a bed of long straw, or very dry hay, kept close down by a grating of wood; and when these plants shall have been planted in these boxes, they must be plentifully watered to consolidate the earth about their roots during the voyage. They should not be watered but when they stand in great need; air must be given to them as often as possible, and they must especially be preserved from wet and cold.

These are nearly all the essential precautions necessary to be taken for the success of the plants

of this nature. The understanding of the gardener will supply an infinity of little details which are not to be foreseen: but we think, that these methods of enriching Europe with foreign productions ought not to be used but in the year of the return of the ships.

A list of the articles necessary for the gardener during his voyage.

1. Twenty-four tin boxes of different sizes, from ten inches in length, by eight in breadth, and six in depth; to twenty inches in length, by sixteen in breadth, and twelve in depth.

These boxes are designed to put a part of the seeds in, which will be exported from Europe, and they will serve on the return to contain the seeds which may be met with during the voyage.

2. Two watering pots, one with a fine rose, the other with a gullet, for watering the plants growing on board the ship, and for the seeds sown in the different spots of cultivation in the voyage.

3. Four pruning knives of different sizes, to serve both in gardening and harvesting.

4. Two grafting knives for the same use.

5. Two quicksilver thermometers graduated after Réaumur, to be placed in the boxes of living

living plants, in order to direct the gardener concerning their cultivation.

6. The ten punches necessary for stamping the numbers proper to mark the trees and plants, which will be exported from Europe, and those which will be brought to it.

7. Sixty pounds of sheet lead, of a line thick, to make the tickets.

8. A staff six feet long, divided into feet throughout, which, at the bottom, must have a socket for a small spade to screw in, with which plants may be taken up roots and all; and, at the upper end, another cavity to fix a small crescent with a hook to come at those branches of trees which will be out of the reach of the hand.

9. Two mattocks, or pick-axes, one end flattened, the other pointed, proper for making the holes necessary to the plantation of trees, and taking up those which are intended to be brought to Europe.

10. Two spades, designed for the same use.

11. Two clasp hand-saws, proper for sawing off the branches of trees, where it would be impossible to obtain the seed otherwise.

12. Three tin boxes, sixteen inches long, by ten broad and six deep, divided in the inside into many compartments, opening with hinges, and having rings to suspend them by shoulder belts,

to go harvesting for seeds, and collecting plants for the herbal.

13. Six other tin boxes, of sixteen inches length, by eleven of breadth, and a foot deep, to put the dry plants in, the numbers of which must correspond with those which will be put upon the seeds gathered.

14. Six reams of large and strong brown paper, not sized, to prepare the specimens of plants designed for the herbal.

15. Four reams of large white paper, to put the dry plants on.

16. Four books in quarto of writing paper, proper for the gardener's journal, and for entering the accounts of the productions which he takes away, and those which he will bring back in the course of his voyage.

17. A large writing case furnished with two pen knives, a dozen pencils, and a file for dissecting seeds.

18. A magnifying glass with two lenses.

19. The *E'lémens d'Agriculture*, by Duhamel, 2 vols. in 12mo.

20. The *Physique des Arbres*, of Duhamel, 2 vols. in 4to.

These two works are designed for the instruction and amusement of the gardener, during so long a voyage.

A list of the seeds, and the quantity necessary to be bought, for sowing in the various places chosen for cultivation.

FIRST DIVISION.

Substances which may be eaten without preparation.

FRUITS OF TREES.

Kernels of	{ Apples	6 bushels.
	{ Pears	6 ditto.
	{ Grapes	8 do.
	{ Gooseberries	8 litrons (or qrs. of pecks.)
Stones of	{ Peaches	2 bushels.
	{ Apricots	1 do.
	{ Plumbs	1 do.
	{ Cherries	$\frac{1}{2}$ do.
	Almonds -	2 bushels.
	Nuts -	2 do.

FRUITS OF HERBS.

Seeds of	{ Melons of different kinds,	6 litrons.
	{ Water-melons, red and } white.	4 do.
	{ Artichokes, white and violet,	4 do.
	{ Guinea Pepper. - -	1 do.

X 3

HERBS.

A list

HERBS.

Seeds of	Celery, of different varieties,	1 bushel,
	Chervil - - - -	$\frac{1}{2}$ do.
	Creffes (alenois) -	1 do.
	Parsley, of different varieties,	4 litrons,
	Purslain (golden) -	1 do.
	Sorrel - - - -	1 do.
	Lettuce (cabbage) -	$\frac{1}{2}$ bushel,
	Lettuce (roman) -	$\frac{1}{2}$ do.
	Small lettuce for cutting,	1 do.
	Endive, or wild succory,	1 do.

ROOTS.

Onions, white and red	-	1 do.
Turnips of different varieties	-	2 do.
Radishes of different species		6 litrons,
Turniprooted radishes, black and white,		2 do.
Garlick - - - -	-	1 do.
Eschalots - - - -	-	1 do.

SECOND DIVISION.

Substances which need no other preparation for eating than to be roasted.

ROOTS.

Potatoes - - - -	-	1 litron.
Carrots of divers varieties	-	2 bushels.
		Chiroui

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Chiroui	-	-	-	3	litrons.
Parfnips	-	-	-	1	buschel.
Salsafy (Spanish)	-	-	-	1	do.
Salsafy (white)	-	-	-	$\frac{1}{2}$	do.
Beet-root (red, white, and yellow,)				3	buschels.

FARINACEOUS SEEDS.

Tobe bought at Brest.	{	Wheat of different species	8	buschels.
		Maize of different varieties	4	do.
		Buck wheat, or black corn	4	do.
		Piedmont rice	-	4 do.
		Barley of different species	4	do.
		Oats of different varieties	2	do.
	{	Rye	-	4 do.

THIRD DIVISION.

*Productions which are not eatable unless boiled,
and on that account are proper only for those
people who have convenient vessels for cooking
them.*

Pease of different species	-	6	buschels.
Kidney beans of different species		6	ditto.
Garden beans of different varieties		3	do.
Lentils of the large species	-	2	do.
Chich-peas, white and red	-	1	do.
Lupines	-	2	litrons.

X 4

Vetches

ration for

1 litron.
2 buschels.
Chiroui

Vetches, white and black	-	-	2 ditto.
Fenugreek	-	-	1 do.
White mustard	-	-	1 do.
The egg-plant	-	-	$\frac{1}{2}$ do.
Cabbages, white	-	-	1 bushel.
Cabbages, red	-	-	1 do.
Citrul, or Pompion	-	-	1 do.
Cucumber	-	-	1 litron.
Gourd	-	-	1 ditto.
Calebash gourd	-	-	1 ditto.
Orach	-	-	1 bushel.
Chard-beet	-	-	$\frac{1}{2}$ do.
Tobacco	-	-	$\frac{3}{4}$ of a litron.

Note.—It will be proper to divide this assortment of seeds into four equal parts, every one of which must be enclosed in a box, not to be opened but at the time of sowing, in order to avoid the inconvenience of letting the air get at such seeds as are not to be sown for many months, and even a year after they are gathered.

Enumeration of vegetables which ought to be conveyed in their natural state.

FRUIT TREES AND SHRUBS.

- 1 Apple tree—red calville.
- 1 Apple tree—white.
- 2 Apple trees—true rennet.

2 Apple

- 2 Apple trees—*d'apis*.
- 1 Pear tree—English beurré.
- 2 Pear trees—bon-chrétien.
- 2 Pear trees—crassan.
- 2 Pear trees—Saint-Germain.
- 4 Vines—golden chasselas.
- 4 Vines—muscadine.
- 2 Vines—raisin de Corinthe.
- 2 Peach trees—grosse mignonne
- 1 Nectarine tree.
- 2 Plumb trees—reine claudé,
- 1 Plumb tree—mirabelle.
- 2 Plumb trees—large damascene of Tours.
- 2 Apricot trees—common.
- 2 Peach apricot trees.
- 3 Fig trees—white.
- 2 Fig trees—angelique.
- 2 Fig trees—violet.
- 2 Cherry trees—Montmorency.
- 2 Black heart cherry trees.
- 2 White heart cherry trees.
- 2 Olive trees—true.
- 2 Quince trees—Portugal.
- 1 Mulberry tree—black.
- 2 Garden chefnut trees.
- 1 Nut tree—tender shell.
- 1 Almond tree—tender shell.
- 2 Raspberry bushes—Maltese.

LEGUMINOUS PLANTS.

Potatoes of different varieties	}	To be had at Brest.
Jérusalem artichoke		
Garlick - - -		
Eschalots - - -		

West-India sweet potatoes and yams, to be taken in at the Cape de Verd Islands, or at the Cape of Good Hope, or in North America.

SHRUBS FOR PLEASURE.

Roses—hundred leaved.

Lilacs.

Tuberoses.

INVENTORY

Q
th
ro

IRO
Iron
Iron
Pack
Copp
Pack
Lead
Cloth
Nets
&c
Hatch
Joiner
Carpe
Iron h
Iron v
Long
Long
Hand
Pincer
nail

INVENTORY

*Of the merchandize and effects embarked on board
the ships under the orders of M. De La Pé-
rouse, for making presents and exchanges.*

IRON in bar	-	-	} Furnished by the Port of Brest.
Iron in plates	-	-	
Iron nails of different sizes			
Packets of iron wire	-		
Copper in sheets	-		
Packets of copper wire	-		
Lead in sheets	-	-	
Clothes of different kinds			
Nets for fishing	-	-	
&c. &c. &c. &c.			

Hatchets of different sizes and adzes			2000
Joiners chissels and gouges	-	-	2500
Carpenters augurs	-	-	50
Iron hammers and malls	-	-	700
Iron wedges to cleave wood	-	-	550
Long saws, framed	-	-	50
Long saws, unframed	-	-	500
Hand saws	-	-	600
Pincers round and flat, and others to draw			} 1000
nails	-	-	
			Knives

had at Brest.

ns, to be ta-
at the Cape

a.

E.

VENTORY

Knives of different sorts and sizes	-	7000
Pruning knives	- - -	150
Pairs of scissars for taylors, and others		1000
Steel files	- - - -	2400
Raspers of wood	- - -	1200
Packets of brass wire assorted, weighing	lbs.	500
Gimlets, or borers	- -	1000
Wimbles with their bits	- -	100
Fishing hooks	- - -	9000
Needles of different sizes	- -	50,000
Pins assorted	- - -	1,000,000
Looking glasses framed of different sizes		600
Drinking glasses with feet	- -	1800
Water bottles	- - -	200
Cups and saucers of India porcelain, co- loured and gilt	- - - } 200	
China bowls, idem	- - -	50
Bugles, or beads of coloured glass, assorted packets	- - - } 1400	
Glass rings in colours	- - -	2000
600 Goblets	} Of pewter.	
100 Ewers		
600 Plates		
100 Dishes		
Tinder boxes	- - - -	1000
Flints for tinder boxes	- - -	30,000
Amadou (a tinder made from the fungi of trees) lbs.	- - - } 200	
		Glue

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Glue, pounds	- - - -	200
Copper pots for the glue	- - -	50
Ringed bells of two kinds, packets	-	24
Combs, of wood, bone, and horn	-	2600
Blowing bellows	- - - -	24
German organs, large	- - -	4
Serinets, or small organs	- - -	12
Dragoons' helmets in copper, with plumes	}	52
and horse-hair tails		
Gorgetts of polished copper		102
Casse-têtes in polished copper	- -	12
Medals in silver, or bronze, the King's ef-	}	100
figy, with the inscription bearing the		
names of the ships, and the epoch of		
the voyage, some with chains of the		
same metal, and some without chains		
Other medals, in silver or bronze, with the	}	600
King's effigy		
Buttons of coloured glass, set in copper,	}	96
gilt, transparent and sparkling, dozens		
Buttons gilt, silvered, and of polished cop-	}	720
per, dozens		
Vermillion, packets	- - -	2000
Feathers red, yellow, and white, bunched,	}	1100
aigretted in plumes, &c. to the amount		
of French livres		
Artificial flowers, to the value of livres		300

Fine

7000
150
1000
2400
1200
lbs. 500
1000
100
9000
50,000
1,000,000
600
1800
200
co- } 200
50
orted } 1400
2000
1000
30,000
fungi } 200
Glue

Fine jewellery, consisting of rows of beads, white, coloured, striped, changeable and reflecting; of ear-rings shaped like pears, and like girandoles of divers colours and divers fashions; of necklaces, bracelets, and medallions, to wear about the neck in various forms and colours; of rings of different fashions, spying glasses mounted in wood, in copper, and in fish skin, to the value of livres } 5000

Toys and common jewellery, consisting of magic lanterns, flint-glass bottles, smooth and diamond like, gilt and coloured; gilt nails, convex glasses, multiplying glasses; whistles in bone and wood; etwees of bone, engraved, in open work, in imitation of lace, and plain; others in pasteboard, painted and varnished; hearts and rings set with stones; knight's crosses, ear-rings, counters, &c. to the value of livres } 900

Tinsel, consisting of galloons, net-work, in Spanish points, Brandenburghs, &c. in gold, in silver, and in coloured foil, for livres } 2800

Gauzes, gold and silver, with wavy colours, *en faux*, to the value of livres } 700

Silk ribbands of different colours, ells 1200
Flowered

Flower
&c.
Calam
lour
Colour
Linen
Comm
nel c
Scarlet
Dutch
Red fri
Scarlet
Serge, r
Blanket
Linen c
Printed
large
Muslin,
White l
Red tap
Thread
Flock
So rolls,
Flower
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ROUND THE WORLD.

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Flowered silk stuffs, damasked, clouded, &c. in remnants, ells	} 312
Calamancoes, in different stripes and colours, - - - ells -	} 100
Coloured silk handkerchiefs - -	200
Linen handkerchiefs, coloured -	500
Common cloths, serges, knittings, and flannel of different colours, ells	} 1200
Scarlet cloth, - ells -	100
Dutch scarlet - ells -	25
Red fringes - - ells -	200
Scarlet coats - - - -	12
Serge, red, white, and blue, ells -	50
Blankets - - - -	50
Linen cloth striped, blue and white, ells	150
Printed calicoes of different patterns, with large flowers, in remnants, ells -	} 850
Muslin, in remnants, ells -	100
White linen, in remnants, ells -	500
Red tape, pieces - - -	72
Thread of different colours, skeins -	1200

Flock-paper, of different colours, large patterns, 80 rolls, of nine ells each.

Flowered paper, 80 quires.

An assortment of garden seeds of the various kinds (beside those enumerated by the Sieur Thouin, first gardener of the royal botanical garden) to the value of about 400 livres.

The total of the merchandize embarked for presents and exchanges amounts to 58,365 livres :

And the particulars recommended by the *Sieur* Thouin in seeds, in trees, shrubs and plants, to 2,330 livres.

The total of the instruments of astronomy, of navigation, of physics*, &c. and of books bought in France, amounts to 17,034 livres.

There have been expended in England for different articles, about 6000 livres.

There has also been a considerable stock of essence of spruce embarked in the ships, as well as of malt for making beer, with other preservatives against the scurvy. The provisions of this nature, and other objects designed to preserve the health of the ship's companies, may be valued at 30,000 livres.

The extraordinary expences of fitting out for this voyage, including in the calculation the extra value of the provision, occasioned by its superior quality, will not exceed 150,000 livres.

(The table of the persons of science, and of the artists embarked for the expedition, is not included herein).

* Not comprising the three quadrants which have been lent by astronomers.

A SUMMARY ACCOUNT

Of the instruments of astronomy, of navigation, of natural philosophy, of chemistry, and others, for the use of the scientific persons and artists employed in the voyage of discoveries.

ASTRONOMY AND NAVIGATION.

THREE astronomical quadrants.

An instrument for observing the transit of planets.

Three astronomical time-keepers, and two calculators.

Several astronomical telescopes, night telescopes, and prism telescopes.

Five time keepers.

An English pocket watch, or chronometer, for the longitudes.

Four reflecting circles, by M. de Borda, to observe the heights and distances of the stars.

Three English sextants for the same use.

Four theodolites, or graphometers, with and without telescopes, to measure the angles on land, and construct plans.

Two assortments of chains and of staves for the same use.

VOL. I.

Y

A steel

A steel fathom rod, with its scale, the same which served for the measure of a degree of the meridian at Peru.

Divers instruments for measuring the length of the pendulum.

Two English compasses for observing the variation of the magnetic needle.

Two dipping compasses lent by the English board of longitude, the same which were used in captain Cook's last voyage.

A compass of the same nature executed by M. Le Dru.

Several other compasses of different uses, such as miners compasses, and others.

Several suitably chosen magnetic bars, in their cases, to retouch the compass needles in case of necessity.

Several sand glasses, half hour and half minute.

A suitable chest, with all the tools in clock and watch-making, and others for repairing the instruments, for the use of the clock and watch-maker embarked in the expedition.

Several cases of mathematical instruments, for the use of the astronomers and engineers, and other instruments suitably chosen for designs and drawing.

NATURAL

NATURAL PHILOSOPHY AND CHEMISTRY.

An air pump, double barrell'd, with all its apparatus.

A plate electrical machine of fifteen inches with all its accessories.

A great number of barometers, thermometers, and hygrometers, of different kinds, for making various experiments.

A concave burning mirror, of a foot diameter.

Two universal microscopes of Dellebarre's invention, with their micrometers.

A great number of compound magnifying lenses with three and four glasses, and simple lenses.

Two machines for measuring the depth of the sea.

A machine to ascertain the temperature of the sea and its saltness at different depths.

Several hydrometers.

Several aerometers.

A large linen balloon lined with joseph-paper, twenty-six feet high and twenty-two and a half in diameter.

Three paper balloons, and three of ox gut.*

Two scaphanders.

An hydrostatical balance with all its accessories.

Phosphoric bougies.

* Gold beater's leaves are made of this when duly prepared.

An eudiometer, by Volta.

An eudiometer, by Fontana.

A chemical apparatus.

A pneumatic apparatus, by Rouland.

A reverberatory furnace.

An assortment of retorts, matraffes, crucibles, and other utensils of chemistry.

A silver bowl for the chemical operations.

A complete assortment of acids, of alkalies, of vinegars, of lime, and other objects necessary for a chemical chest.

BOTANY AND NATURAL HISTORY.

An assortment of boxes for collections of plants.

Brown paper, for drying plants, 50 reams.

Nine cases enclosing scalpels, pincers, scissars, &c. for dissections.

Eight nets in polished steel and in wire work, for catching insects.

An assortment of shrubs, plants, seeds, &c. denoted in M. Thouin's list.

A portable case of mineralogy.

DRAWING.

Several cases containing an assortment of colours, brushes, &c. papers selected of different kinds for the drawings in botany, for plans, &c.

A CATALOGUE

A C A T A L O G U E

Of books of voyages, of astronomy, of navigation, of natural philosophy, and others, consigned to M. de la Pérouse, for the use of the officers and scientific men embarked under his orders.

VOYAGES.

Histoire générale des Voyages, by the abbé Prevost.

Histoire des Navigations aux Terres Australes, by the president de Brosses.

Historical Collection of Voyages, &c. by Dalrymple.

Hawkesworth's Collection, and Cook's three Voyages in French and English.

Discoveries of the Russians, by Coxe.

Voyage of the Russians, by Muller.

of M. de Ghabert.

of M. de Fleurieu.

of M. M. de Verdun, Borda, and Pingré.

of Phipps, to the North Pole.

of Anson.

of Bougainville.

of Kerguelen.

of Pagès.

of Dampier.

of La Condamine.

Voyage of Ulloa.

de la Martinique, by Chanvalon.

Travels in California, by the abbé Chappe.

Voyage of M. Sonnerat.

Observations du P. Feuillée.

Découvertes dans les Voyages de la Mer du Nord.

Question sur les Voyages D'Arabie, by Michaelis.

Considérations géographiques & physiques sur
les nouvelles Découvertes.

Découvertes des Européens dans les différentes
Parties du Monde.

ASTRONOMY AND NAVIGATION.

Histoire de l'Astronomie ancienne & moderne,
by M. Bailly.

Astronomie de M. De Lalande.

Astronomie de La Caille,

Exposition du Calcul astronomique.

Tables de Mayer.

Tables de Logarithmes.

Flamsteed's Atlas.

Cælum australe, de La Caille,

Méridienne de Paris.

Figure de la Terre, by Bouguer.

Traité d'Optique, by the same.

—— de Navigation, by the same.

—— du Navire, by the same.

Nautical Almanack, for the years 1786, 1787,

1788, 1789, 1790.

Calendrier

Calendrier perpétuel.

Métrologie de Pauçon.

Dissertation sur les Longitudes en Mer.

Vocabulaire de Marine, by M. Lescallier.

Discours du Neptune Oriental, by M. DAprès.

All the books usual in navigation.

NATURAL PHILOSOPHY

Journal de Physique, compleat, 28 vols. 4to.

Recueil de Physique, by Deslances.

Cours de Physique, by Defaguliers.

Physique de Muffchenbroek.

Opuscules physiques, by the abbé Rochon.

Lettres physiques sur la Terre, by M. De Luc.

Électricité de M. Sigaud De La Fond.

Rouland, sur les Gaz.

NATURAL HISTORY.

Histoire Naturelle, by M. De Buffon.

Dictionnaire d'Histoire naturelle.

Œuvres d'Histoire naturelle, by Charles Bonnet.

Sur la Formation des Montagnes, by M. Pallas.

Mémoire pour rassembler les Curiosités d'Histoire naturelle.

Tableau physico-météorologique, for the observations to be made in the voyage.

Construction de Thermomètres.

History of the winds, by Bacon.

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Enquiries

Calendrier

Enquiries concerning the modifications of the atmosphere.

Flux and reflux of the sea, by Deslandes.

Vossius, Sur les courans.

Peyssonnel, on currents and corals.

Hygrometrie, by M. De Saussure.

Essay on hygrometry.

Resistance of fluids, by Boffut.

Hales's Instructions concerning the rendering sea-water fresh.

Discovery of the ventilator by Hales.

Means of preserving the health of ship's crews.

Diseases of sea-faring people, by M. Poissonier Desperrières.

Advice concerning the conveyance of trees, plants, &c. by sea.

Treatise on vegetation, by Mustel.

Philosophical letters upon salts, by Bourguet.

Systema naturæ, auctore Linnæo.

Linnæi *genera et systema* plantarum.

Linnæi *Philosophia botanica*.

Linnæi *Supplementum*.

Forster, *Genera plantarum*.

Plumier, *Plantarum genera*.

Adanson, *Families of plants*.

Thesaurus Zeylanicus.

Herbarium Amboinense.

Thunberg, *Flora Japonica*.

Burmanni *Plantæ Africanæ*.

Bergii *Plantæ Capenses*.

- Piso *et* Marcgravius, *historiæ Indiæ*.
 Dillenii *Historia Muscorum*.
 Klein, *Animal kingdom*.
 Forkal, *Descriptio animalium*.
 Lettre sur les animaux, by Leroi.
 Pallas, *Spicilegia zoologica*.
 Pallas, *Miscellanea zoologica*.
 Ornithologie de Briffon.
 Derham's *Synopsis of birds*.
 Gouan's *History of fishes*.
 The art of fishing.
 Conchyliologie de Dargenville.
 Conchyliologie fluviatile.
 Klein, *Sur les ourfins*.
 Pallas, *Elenchus zoophytorum*.
 Fabricii *Elementa entomologiæ*.
 Fabricii *Genera insectorum*.
 Fabricii *Species insectorum*.
 Muller, *De vermibus terrestribus*.
 Dictionnaire de chymie.
 Chemistry by M. De Fourcroy.
 Crystallographie de M. Romé de Lifle.
 Essay upon a theory of crystals.
 The Works of Henckel.
 ——— of Dubose d'Antic.
 ——— of Marcotte.
 Carte minéralogique, by Guettard.
 Origine des langues, par Court de Gébelin.
 Encyclopédie.
 Memoirs of the Academy of Sciences.

A LIST OF THE NAMES

Of the officers, scientific men, artists, and sailors embarked on board the frigates La Boussole and L'Astrolabe, under the orders of M. De La Pérouse.

JULY 1785.

LA BOUSSOLE.

Messrs.

DE LA PÉROUSE, *capitaine de vaisseau*, commander in chief, employed as *chef de division*, and made *chef d'escadre*, the 2d of November, 1786.

Lieutenans.

DE CLONARD, made *capitaine de vaisseau*.
D'ESCURES.

Enseignes.

BOUTIN, made *lieutenant de vaisseau*, the 1st of May, 1786, and *major*, the 14th of April, 1788.

DE PIERREVERT.

COLINET, *lieutenant de fregate*, made *sous-lieutenant de vaisseau*, the 1st of May, 1786.

Gardes de la Marine.

MEL DE SAINT-CERAN, put on shore at Manilla, the 16th of April, 1787.

DE MONTARNAL.

DE

DE ROUX DARBAUD, volunteer, made *élève de la marine*, the 1st of January, 1786, and *lieutenant de vaisseau*, the 14th of April, 1786.

FREDERIC BROUDOU, volunteer, made *lieutenant de vaisseau*, the 1st of August, 1786.

Engineers, scientific men, and artists.

DE MONNERON, captain of the corps of engineers, engineer in chief.

BERNIZET, geographical engineer.

ROLLIN, engaged as surgeon-major.

LEPAUTE DAGELET, of the academy of sciences, professor of the military school, and astronomer.

DE LAMANON, natural philosopher, mineralogist, and meteorologist.

L'ABBE' MONGES, regular canon of the French church, naturalist, performing the functions of chaplain.

DUCHE' DE VANCY, draughtsman of figures and landscapes.

PREVOST LE JEUNE, botanical draughtsman.

COLLIGNON, botanical gardener.

GUERY, clock-maker.

Warrant Officers.

JACQUES DARRIS, *premier maître d'équipage*.

ETIENNE LORMIER, *idem*.

VINCENT LE FUR, *maître d'équipage*.

JE'RÔME LAPRISE MOUTON, made *sous-lieutenant de vaisseau*.

FRANÇOIS

FRANÇOIS TAYER, *contre-maitre*.

FRANÇOIS ROPARS, *idem*.

JEAN-MICHEL LE BEC, *quartier-maitre*.

JEAN-BAPTISTE LE MAITRE, *second pilote*.

EUTROPE FAURE, *aide-pilote*.

Gunners and fusileers.

PIERRE TALIN, pay-master serjeant of marines,
premier-maitre canonnier.

EDME-FRANÇOIS-MATTHIEU LIVIERRE, *ser-
gent canonnier*.

ANTOINE FLHIRE, corporal.

FRANÇOIS DIEGE, fusileer.

GEORGE FLEURY, *idem*.

JEAN BOLET, *idem*.

PIERRE LIEUTOT, *idem*.

E'TIENNE DUTERTRE, drummer.

Carpenters, caulkers, and sail makers.

PIERRE CHARRON, master carpenter.

JEAN-BAPTISTE-FRANÇOIS SOUDE', carpenter's
mate.

ANDRE' CHAUVE, *idem*.

PIERRE MESCHIN, master caulker.

CLAUDE NEVIN, caulker's mate.

JEAN FAUDIL, *idem*.

ALEXANDRE MOREAU, *idem*.

JACQUES FRANCHETEAU, master sail maker.

ANDRE' VERRIER, sail maker's mate.

LAURENT POINTTEL, *idem*.

Topmen,

Topmen, steerfmen, and sailors.

GUILLAUME DURAND.	PIERRE BRETAUD.
JEAN MASSON.	JEAN FRICHOUX.
JACQUES POCHIC.	GUILLAUME STEPHAN.
JULIEN HELLEC.	PIERRE-MARIE LAS-
FRANÇOIS GORIN.	TENNEC.
FRANÇOIS LHOSTIS.	JEAN GOHONNEC.
JEAN-MARIE DREAU.	YVES LE BIHAN.
ALAIN MARZIN.	JEAN LUÇO.
CORENTIN JERS.	ANDRÉ'-MARIE LE
LOUIS PLEMER.	BRICE.
FRANÇOIS GLOAHEC.	BERTRAND DANIEL.
JOSEPH LE BAS.	JEAN GARNIER.
JOSEPH PLEVIN.	LOUIS LE BOT.
JEAN DARAN.	ALAIN ABGRAL.
JEAN DONETY.	CHARLES-ANT. CHAU-
PAUL JOSEPH BER-	VRY.
TELE'.	PIERRE ACHARD.
JEAN MAGNEUR.	GUILLAUME PICHARD.
JEAN FRANÇOIS DU-	HILARION-MARIE NO-
QUESNE.	RET.
JULIEN ROBERT.	JEAN-PIERRE CHE-
PIERRE BONNY.	VREUIL.
CHARLES LE DUC.	

Quarter gunners.

CÉSAR-AUGUSTIN DE	PIERRE PRIEUR.
ROZIER	MARENS CHAUB.
MICHEL-BERRIN.	JEAN-PIERRE FRAI-
FRANÇOIS-JOSEPH	CHOT.
VAUTRON.	PIERRE GUILLEMIN.
ANDRÉ' ROTH.	JEAN GILLET.
JEAN BLONDEAU.	JOSEPH RAYES.
MICHEL NITERHOF-	
FER.	

Super-

Topmen,

Supernumeraries.

JEAN QUERENNEUR, coasting pilot.
 JACQUES LE CAR, second surgeon.
 JEAN LOUVIGNI, first clerk.
 SIMON ROLLAND, cooper.
 JOSEPH VANNEAU, baker.
 JEAN-PIERRE DURAND, master armourer.
 JEAN-MARIE BLEAS, blacksmith.
 RENÉ-MARIE COSQUET, master carpenter.
 JACQUES QUINION, cook.

Domestics.

PIERRE CAZAURANT.	BENJAMIN, (a negro).
JEANE-FRANÇOIS BISALION.	FRANÇOIS BRETTEL.
	MICHEL SIRON.
RENÉ DE ST. MAURICE.	LOUIS DAVID.

Supplement.

GUYET DE LA VILLENEUVE, taken on board
 at Manilla, the 7th of April, 1787.
 JEAN-CHARLES MASSEPIN, fusileer
 DOMINIQUE CHAMPION, *idem*.
 PIERRE LEBIS, *idem*.
 JEAN JUGON, *idem*.
 PIERRE MOTTE, *idem*.
 Six Chinese sailors.

L'ASTROLABE

L'ASTROLABE.

Messrs.

DE LANGLE, *capitaine de vaisseau*, commander.

Lieutenant.

DE MONTI, *made capitaine de vaisseau*.

Enseignes.

FRETON DE VAUJAS.

DAIGREMONT.

DE LA BORDE MARCHAINVILLE, supernum-
ery.

BLONDELA, *lieutenant de fregate*.

Gardes de la Marine.

DE LA BORDE BOUTERVILLIERS, *made lieu-
tenant de vaisseau*, the first of May, 1786.

LAW DE LAURISTON, *idem*.

RAXI DE FLASSAN, supernumerary, *made lieu-
tenant de vaisseau*, the first of May, 1786.

Scientific men and artists.

MONGE, professor of the military school, astro-
nomer, set on shore at Teneriffe, the 29th of
August, 1785.

DE LA MARTINIÈRE, doctor of physic, botanist.

DUFRESNE, naturalist.

LE

LE PÈRE RECEVEUR, of the order of cordeliers, naturalist, and performing the functions of chaplain.

PREVOST, (the uncle) botanical draughtsman.

LAVAUX, surgeon in ordinary of the navy.

LESSEPS, vice-consul of Russia, interpreter; set on shore at Kamtschatka, and commissioned to carry the dispatches of M. De La Pérouse to Paris.

Warrant officers.

FRANÇOIS LAMARE, *maître d'équipage*.

FRANÇOIS MARIE AUDIGNON, *idem*, supernumerary.

SE'BASTIEN ROLLAND, *contre-maître*.

GUILLAUME-MARIE GAUDEBERT, *idem*.

MATHURIN LE'ON, *premier pilote*.

ADRIEN DE MAVEL, *second pilote*,

PIERRE BROSSARD, *aide-pilote*, *made sous-lieutenant de vaisseau*.

JEAN L'AINE', *aide pilote*.

Gunners.

JEAN GAULIN, serjeant of marines, *maître canonnier*.

LE'ONARD SOULAS, corporal, *second canonnier*.

JACQUES MOREL, *aide-canonnier*.

PIERRE CHAUVIN, *idem*.

PIERRE PHILIBY, *idem*.

FRANÇOIS SAULOT, *idem*.

CHRIS-

CHR
JEAN

ROBE
JEAN
FRAN
JEAN
JEAN
LOUI
JEAN
OLIV
YVES
FRAN
BAST
YVES

LOUIS
PIERR
JEAN M
JOSEPH
GUILL
NE.
CHARL
ANT
FRANÇO
YVES-L
DEL.
GILLES
VOL.

CHRISTOPHE GILBERT, corporal, *aide-canonnier*.

JEAN PIERRE HUGUET, drummer, *idem*.

Carpenters, caulkers, and sail makers.

ROBERT-MARIE LE GAL, master carpenter.

JEAN BERNY, carpenter's mate.

FRANÇOIS BIZIEU, *idem*.

JEAN LE CAM, *idem*.

JEAN-FRANÇOIS PAUL, master caulker.

LOUIS MEVEL, *idem*.

JEAN GROSSET, master sailmaker.

OLIVIER CREACHADEC, sailmaker's mate.

YVES QUELENEC, master caulker.

FRANÇOIS LÉBOUCHER, caulker's mate.

BASTIEN TANIU, boatswain's mate.

YVES BOURHIS, sailmaker's mate.

Topmen, steersmen, and sailors.

LOUIS ALLES.

PIERRE-MARIE RIO.

JEAN MOAL.

JOSEPH LE QUELLEC.

GUILLAUME DUQUES-
NE.

CHARLES-JACQUES-
ANTOINE RIOU.

FRANÇOIS LE LOCAT.

YVES-LOUIS GARAN-
DEL.

GILLES HENRY.

VOL. I.

GOULVEN TARREAU.

JEAN-MARIE BASSET,
set on shore at Macao,
in China, 19 Jan. 1787.

PIERRE-MARIE-FID'E-
LE PAUGAM.

JEAN-LOUIS BELLEC.

JOSEPH LE BLOIS.

JEAN-MARIE LETA-
NAFF.

GUILLAUME-LAM-
BERT NICOLE.

Z

BER-

BERTRAND LEIS-
SEIGUE.

JULIEN RUELLAND.

JEAN LE BRIS.

DENIS LE CORS.

JEAN LE GUYADER.

PIERRE BANNIOU.

JOSEPH RICHEBECQ.

FRANÇOIS - MARIE

VAUTIGNY.

YVES HAMON.

JEAN HAMON.

CLAUDE LORGI.

JEAN BERNARD.

JEAN GOURMELON,

ALAIN CRE'E, deserted
at Conception, in Chili,
March the 14th, 1786.

JEAN MONENS.

LOUIS MEZON.

GUILLAUME QUEDEC.

PIERRE FOUACHE.

JEAN REDELLEC.

GUILLAUME AUTRET.

FRANÇOIS FERET.

MATHURIN CAUSIAU.

GUILLAUME RICHARD.

LAURENT ROBIN.

JULIEN MASSE'.

JEAN-THOMAS AN-
DRIEUX.

Quarter gunners.

PIERRE GUIMARD.

LOUIS DAVID.

JOSEPH FRETCH.

LOUIS SPAN, deserted at
Conception, the 14th
of March, 1786.

CHRE'TIEN THOMAS.

JEAN-BAPTISTE PLI-
NER.

CODERANT LENDE-
BERT.

JEAN-GAUTIER PLU-
MEUR.

JULIEN LE PENN.

FRANÇOIS BIGNON.

PIERRE RABIER.

Supernumeraries.

FRANÇOIS QUERRE', coasting pilot.

JEAN GUILLOU, surgeon.

JEAN-MARIE KERMEL, purser's steward, died
of the effect of a wound from a musquet, the
7th of September, 1787.

PIERRE

PIERRE CANEVET, cooper.
 RENE' RICHARD, butcher.
 NICOLAS BOUCHER, baker.
 JACQUES LE RAND, armourer.
 FRANÇOIS-MARIE OMNES, blacksmith.
 FRANÇOIS MORDELLE, cabin-boy.

Domestics.

YVES RIOU, set on shore at Teneriffe the 30th
 of August, 1785.
 SIMON-GEORGES DEVEAU.
 JEAN GERAUD.
 JEAN SOL, died the 11th of August, 1786.
 JEAN-LOUIS DROUX, set on shore at Macao,
 the 1st of February, 1787.
 FRANÇOIS POTORELLE,
 JOSEPH HEREAU.

Supplement.

DUPAC DE BELLEGARDE, *garde de la marine*,
 made *lieutenant de vaisseau*, the 4th of August,
 1786, from the flute the *Maréchal de Castries*,
 embarked at Macao the 1st of January, 1787.
 LE GOBIEN, *garde de la marine*, made *lieu-*
tenant de vaisseau the 5th of March, 1788,
 from *la Subtile*, embarked at Manilla the 8th
 of April, 1787.
 PIERRE DESLUCHES, fusileer.
 MICHEL-E'TIENNE PHILIPPE, *idem*.

FRANÇOIS MARIN, *idem*.

Six Chinese sailors, embarked at Macao.

NARRATIVE

*Of an interesting voyage * in the frigate La Princeſa, from Manilla to San Blaz †, in 1780, and 1781.*

As ſoon as I arrived at Manilla, the commander of the frigate which had carried me thither, landed the marine forces he had brought with him, ſtationed them at Cavite ‡ to defend it, and appointed me major of thoſe troops. He ordered me at the ſame time to draw the plan of that port and its environs. The object of this was to determine on the moſt favourable ſituation for placing the veſſels deſigned to oppoſe the landing of an enemy.

* The Spaniſh originals of this narrative, and of the extract following, were ſent by M. De La Pérouſe; the tranſlation is the work of A. G. Pingré, and the correſponding chart, conſtructed according to this narrative, and the ancient journals, is the performance of Buache, member of the national inſtitute. (*Fr. Ed.*)

† Manilla, in the iſland of Luconia, is the capital of the Philippiſes: San Blaz is a ſea-port, on the weſtern coaſt of Mexico.

‡ Cavite is a port three leagues from Manilla.

The

The governor fitted out the frigate *la Princesa*, for an expedition which he considered necessary to be kept a secret. When the ship was ready to put to sea, I very unawares received orders to take the command of it. My surprize at this unexpected appointment, the ignorance I was in with respect to the object of the expedition, the fear of seeing my mission interrupted, should there be a necessity for an engagement, were to me the source of a thousand disquietudes: but the governor represented to me, that the expedition would do me so much the more honour, as the object was the more interesting; that if the enemy should pursue me, a thing he would not fail to do, the skill and activity of my manœuvres would be a proof of my capacity; and that, in short, the success of the expedition would be of great advantage to our Sovereign. These expressions so powerfully incited me, that I considered myself honoured by the governor's selecting me for an expedition like this, in such critical circumstances. I accepted the command, and put to sea the 24th of August, after having received a sealed packet from government, which contained the instructions and orders I was to follow, and the port to which I was directed to repair. I was not to open this packet till I should be at twelve leagues distance from Cavite.

The 25th, being at the prescribed distance, I opened the packet. I was enjoined to make the port of Sifiran*, where I should wait the farther orders of government, keeping myself always on guard, ready to repel the attack of the enemy, who would, doubtless, attempt to intercept me, should they come with a hostile armament to Manilla.

The winds died away, and, becoming contrary, prevented my getting out of the passage between the islands. I still kept my course, working as much as possible to windward; but I could not get the better of the current, which forcibly carried me back, coming from the point of Escarfeot†, which I found impossible to double. I was therefore obliged to anchor on the 29th, at two o'clock in the morning, near this point, opposite the harbour of Galeras, in twenty-five fathoms over a sandy bottom.

The 30th, at half after three in the morning, the wind changed to the west; but it was so violent, that the ship drove from her anchors. I was

* Sifiran is a port on the east coast of Luconia, almost immediately opposite to Manilla, being but 16 minutes more southerly than that city.

† This point, the Porto de las Galeras, the Islands of Tiaco and San Bernardo, are situate in the channel or strait, which separates the Island of Luconia from the other Philip-pines.

desirous of getting under sail, but the strength of the current prevented me, drifting me also towards the harbour. I was in ten fathoms water, and let go an anchor which would not hold, owing to the current and the wind which freshened more and more, insomuch that I soon found myself in only five fathoms water.

I dropped another anchor, and with the help of the sheet anchor, which I instantly let go, I increased my distance from the shore, which was little more than the ship's length from me: and although I still lay within the point of Alagican, which forms the port of Galleras, I could, notwithstanding, get under way, but it was at the expence of leaving one bower anchor, the sheet anchor, two bower cables, and a sheet cable, entangled in the rocks*. At nine o'clock in the morning, I doubled the point; and though the wind had moderated in passing to the third quarter†, nevertheless, by a press of sail, I reached

* Much is abridged here, as well because the detail would be immaterial and tedious, as because there are some passages that I do not understand, either for want of comprehension on my part, which, however, I do not take to be the case; or from the fault of the copier in having mutilated the original.

† The Spaniards divide the horizon into 4 quarters; the first extends from the north to the east, the second from east to south, the third from south to west; and the fourth from west to north.

an anchorage the 31st, at eight o'clock in the evening, under shelter of the island Tiaco, so as to be able to get out the next day.

The 1st of September I set sail again, and at four o'clock in the afternoon, I was a quarter of a league to the northward of San Bernardo. Thence I shaped my course for passing between the Islands Catanduanes*, and Luconia; as this course would conduct me the narrowest passage between the breakers and that island, I lay to at ten o'clock, and I found myself on the 2d, at day break, at two leagues distance from Catanduanes. I made all the sail I could, and at half after eleven, I had reached its most north-westerly point, and I passed within a very little distance from the islets close to that point. Thence I ran to the west-south-west, and to the west, keeping my wind to gain Sifiran. I nearly reached the port about six o'clock in the evening. I stood off and on all night: the next day, the 3d, I anchored at two o'clock in the afternoon, and moored the frigate in the best manner I could, in expectation of the final orders which were to be sent me.

On my arrival, I began to exercise the crew in every thing which might contribute to our

* This island is situate over against the most south-easterly part of the Island of Luconia, its northerly point is almost upon the same parallel as Sifiran.

defence

defence in case of attack, so that if such an event had taken place, all were sufficiently experienced in the use of arms. I wrote also to the governor, to apprise him of my arrival at Sifiran, and to desire his final orders.

Sifiran is situate in the vicinity of very high mountains, which render the air extremely damp, and appear to be the cause of the continual hurricanes which I experienced during my stay in this port. The constant wet weather also occasioned diseases amongst my crew, of which one seaman died.

We were thirty or thirty five leagues from the nearest inhabited parts, to communicate with which it was necessary to climb over steep mountains, infested with savages, which rendered the communication very difficult. In consequence, I met with the greatest difficulty in procuring some few of the refreshments which I thought would be useful to us, in the course of so long a voyage.

For replacing the two bower cables and the sheet cable that I had lost, I requested of the alcade (or commandant) of the province, to order new ones to be made; he did so, and sent them to me as soon as they were finished. I desired also a supply of anchors; there was not one however to be found, to his knowledge, in the whole extent of his jurisdiction.

On

On the 10th of November, an officer came on board, and put into my hands a large box, containing some dispatches relating to his Majesty's service. The governor general gave me orders to carry this box with all possible haste to his excellency the viceroy of Mexico; and for that end to make sail for the Port of San Blas, or Acapulco, according as I should find it most expedient. I immediately made preparations for this voyage, but two successive tempests would not allow me to enter on it, before the 21st of November.

To sail from the Philippines to Mexico, it is necessary to begin the voyage in June: the westerly winds, which then blow, carry the ships to the east of the Marian Islands: in every other season the navigation is scarcely practicable.

I therefore considered myself as going to undertake a voyage absolutely new, over tracks of the ocean almost unknown till that time. And admitting it may have happened, that some navigator has held a course in some measure analogous to my own, is it likely he would have had the same winds? would he have steered the same courses? would he have run through the same parallels, the same meridians as I did? I may therefore conclude, that the track I pursued had never been traced before by any navigator.

As

As I had nothing more at heart than to execute faithfully the orders I had received, and to render my expedition of advantage to his Majesty's service, and conducive to the welfare of his subjects, I was animated by this sentiment, to overlook the apprehensions I felt from my absolute ignorance as to the course I was going to take. My knowledge from experience extended no farther than to New Britain; and, even in this run, I met with a multitude of islands, of which there did not exist the smallest vestige in any of our charts.

M. De Bougainville, who sailed from the east of New Guinea as far as the Cape of Good Hope in the same island, only gives us the position of two little islands, which he named *Les Anachorètes*, and of a group of other little low islands, to which he gave the name of *Mille Isles**. He has undoubtedly placed them in their true latitude: but exclusive of these islands, not a day passed wherein I did not discover others, with which I found myself surrounded, as my chart will evince, to the satisfaction of every one who inspects it. The only point I had to attend to, and which, in fact, I did, from the first instant of my undertaking the expedition, was to

* Bougainville did not give the name of *Mille Isles* to this group, but that of *L'Ecbiquier*.

employ the most scrupulous attention, and to exercise the most active vigilance during the whole course of our navigation, so that I might acquit myself successfully of the commission with which I was intrusted, in despite of the continual obstacles I should have to encounter.

Had I been dispatched from a port where I could have furnished myself with every thing necessary for so long a voyage, I should have escaped the anguish excited by numerous distresses. My crew were attacked with diseases more or less severe, the provision, limited precisely to a six months voyage, was for the most part found to be eaten into by insects, and rotten; the water was limited to seventy pipes and forty barrels, a provision, considering the waste, insufficient for a voyage of so long duration; and the cordage of the ship was such, that it broke at the first moment of our attempting to make use of it. I had desired the alcade to furnish me with some tar, of which we were absolutely in want, but none was to be found in the province: I was obliged to supply its place with pitch. Though all these reasons tended to diminish my hopes, my zeal for the King's service suffered no abatement; and I prepared my mind to encounter all the calamities with which the nature of our provision, and the state of our rigging so plainly threatened me.

Departure from the Port of Sisfran, situate on the eastern coast of the Island of Luconia, in $14^{\circ} 20'$ north-latitude, $126^{\circ} 34'$ west of Cabo San Lucas, in California, $121^{\circ} 20'$ east of Paris, and $20'$ west of San Bernardo, in the mouth of the strait.

I put to sea on the 21st of November, with fine breezes from the east-north-east, and east, which in a little time became strong; and as they were directly-contrary, I ran upon different tacks to get to the northward, and clear the Island of Catanduanes. These winds carried me to the latitude $16^{\circ} 14'$, which I found by observation on the 30th. I then bore away to the south-south-east, and saw the island again on the 3d of December; it bore from me south-east by south, distant five leagues. I concluded, that the currents* had drifted me $2^{\circ} 26'$ to the west, notwithstanding the correction which I had made of my north-north-west course. In this position where I was delayed by the winds, which did not allow me to steer to the south-east, I was further

* Besides the currents, the leeway had, without doubt, much influenced the direction of the course: but it was apparently upon the reckoning of this leeway that the course had been corrected.

obstructed

De-

obstructed by a heavy and mountainous sea, and by winds extremely boisterous, which obliged me often to lie to under the forefail, suffering every possible difficulty to get to windward, so as to be able to continue my voyage.

The 9th of December, after having made several boards, I found myself again in sight of Catanduanes, and took my last departure from it; the most southerly point of the island bearing west-north-west 3 deg. west, distant ten or twelve leagues; which put me in $13^{\circ} 24'$ latitude, and $122^{\circ} 26'$ longitude east of Paris, $46'$ east of San Bernardo.

We had then tolerably fresh breezes from the southward and westward; I took the advantage of them, to run to the eastward till the 14th of December, when the winds veered again to the east-north-east, east, and east-south-east. These changes obliged me to run to the southward, keeping close to the wind.

The 18th, according to one of the charts by which I shaped my course, I ought to have been to the eastward of the Island called *The Martyr*, at seven leagues distance; and between the 20th, and 21st, I ought to have passed by that called *The Triangle*: but by another chart, I was on the 19th in the proximity of the Island of Yap, or the Great Caroline; and on the 20th, abreast of the Islands of Pelew, without having sight of any of these

these islands: but the short and heavy sea we here met with, could only be owing to the proximity of the Caroline Islands, or New Philippines, such as they are placed upon the French chart.

The 29th, I crossed the line, and passed into the southern hemisphere. The winds then blew from the southward and westward: they were tolerably brisk, but interrupted by frequent calms, which incommoded us much by the excessive heats they occasioned. I then steered to the eastward, not losing sight however of the design I had to get by degrees to the southward, in order to fall in with the westerly winds, which might be expected to prevail in high latitudes. While steering this course, we remarked a great many large trunks of trees, birds of different species, boobies, and others called *dominicos*.

In this same course I proposed to explore the *Mille Isles*, the most northerly and easterly of which Bougainville places in his chart in $1^{\circ} 10'$ south, and * to the east of Paris. I saw them accordingly on the 7th of January, they extended from 38 degrees of the second quarter, to nine degrees of the third †. The latitude of that,

* The longitude is blank in the manuscript; it is $139^{\circ} 30'$, according to Bougainville's chart. In other respects, the *Mille Isles* are obviously the same as his *Echiquier*.

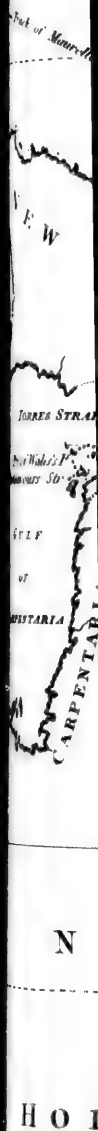
† That is, they extend from the east 38 degrees south, to the south nine degrees west.

which

which was the most to the north-east, was found to accord precisely with that which the chart gave it; but its longitude was, according to my statement, $141^{\circ} 12'$ to the east of Paris. I determined to coast along these islands at as little distance from them as possible. I took an infinite number of bearings, which, combined with the way the frigate made, enabled me to determine, with the greatest accuracy, the position of twenty-nine of these islands which we had discovered.

There are in all probability many others in this southern quarter, of which we were not able to get sight. It is not possible to delineate on the charts the extent of each of these islands, some of which scarcely reach a league in length. All are low, and covered with trees; some of them surrounded with reefs which join them to contiguous islands. The sea breaks over these reefs, and they are only seen a little way off. I drew nearer and nearer to these islands, so as to sail by them at the distance of only two miles from the most northerly. At seven o'clock in the evening I discovered a great number of fires on the most easterly of the islands, and could not withhold my astonishment on finding such small parcels of land inhabited.

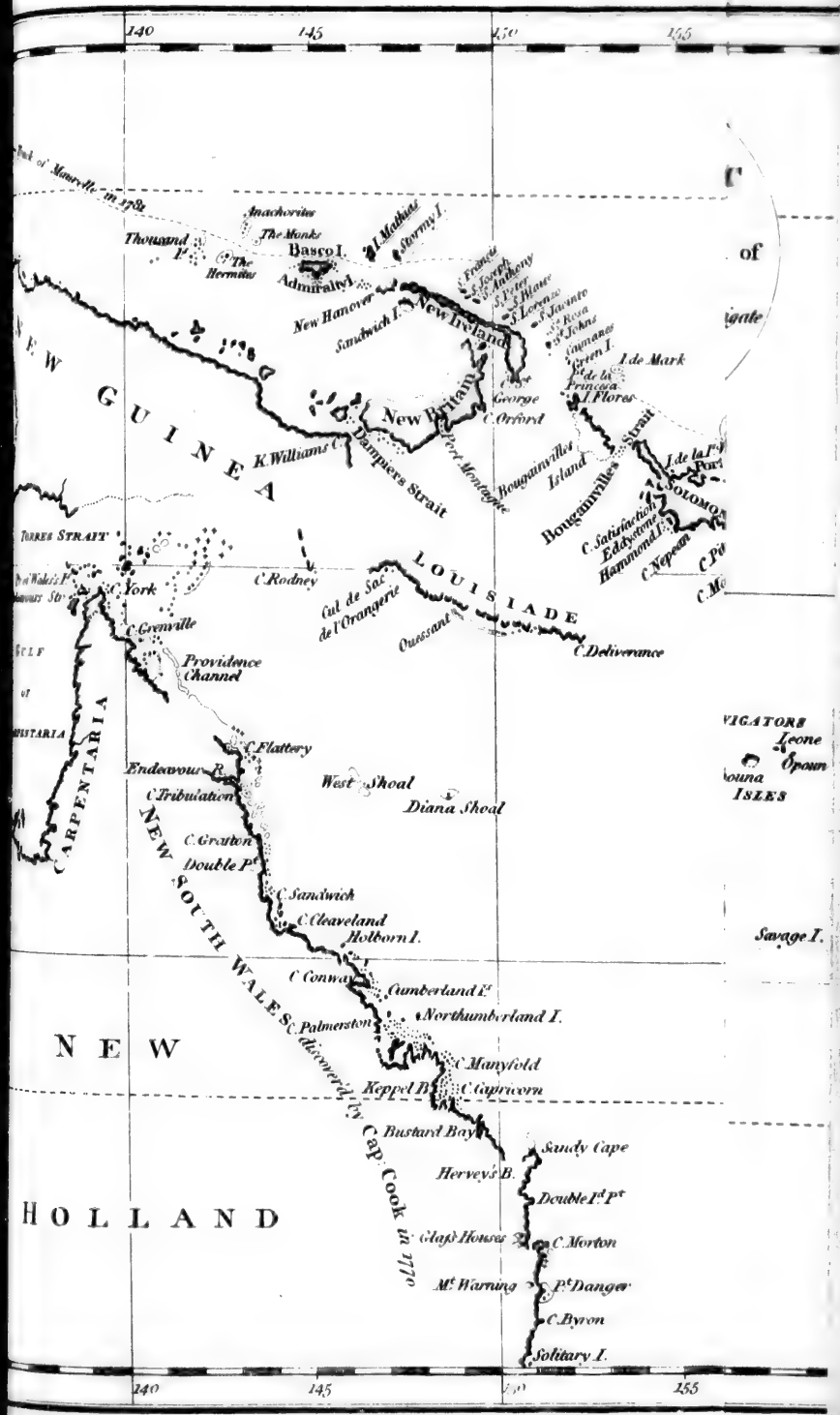
Quitting these islands, I ordered the ship to be steered east by north; and on the 8th of the month [January] we discovered to the south, three
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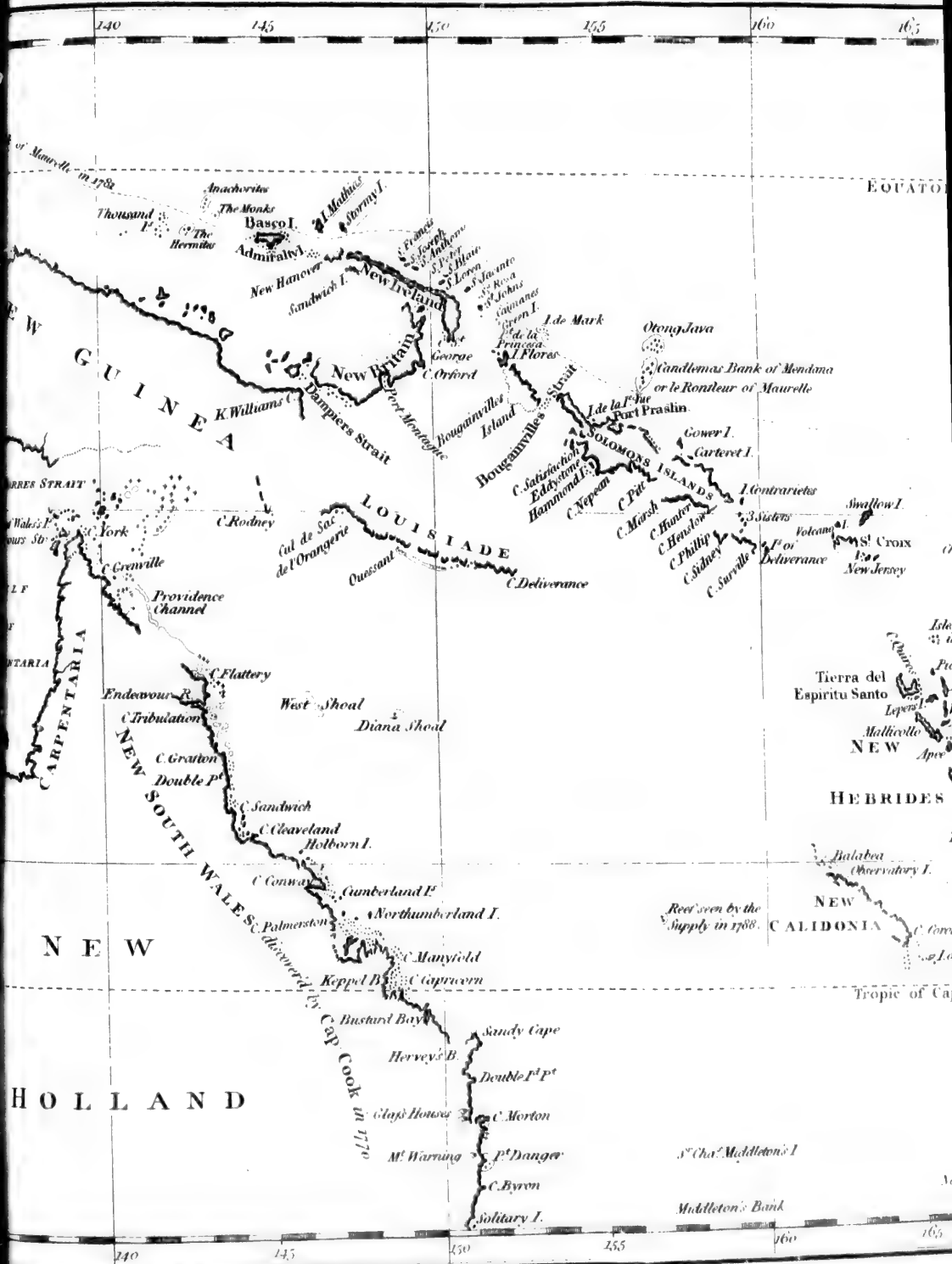


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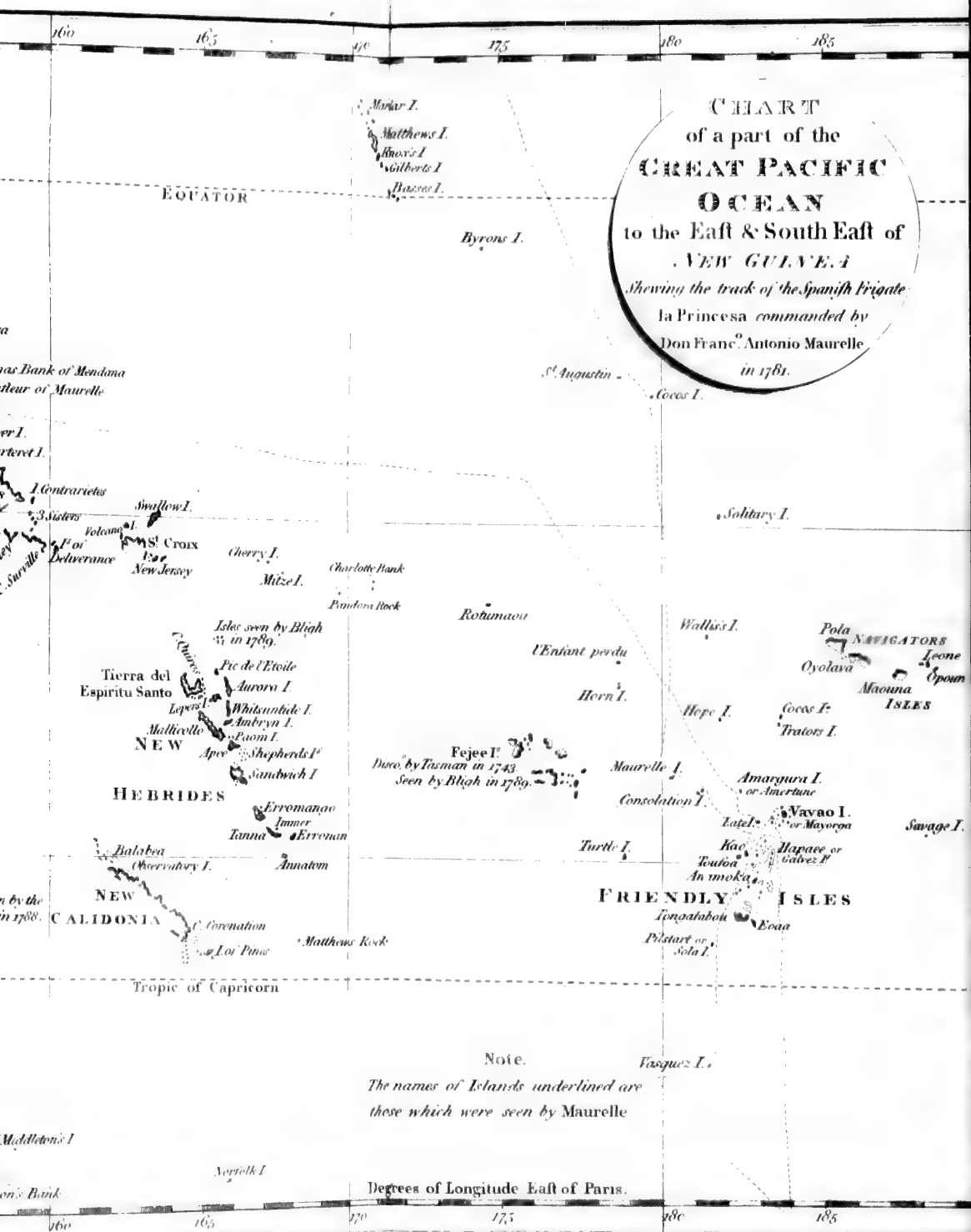


CHART
of a part of the
GREAT PACIFIC
OCEAN
to the East & South East of
NEW GULVE.
Shewing the track of the Spanish Frigate
la Princesa commanded by
Don Francisco Antonio Maurelle
in 1781.

Note.
The names of Islands underlined are
those which were seen by Maurelle

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VOL. I

degrees east, at the distance of five or six leagues, two islets, which I named the *Hermitanos*; the evening of the same day we saw the Anchorets to the northward and westward, distant five miles: I found them precisely in the latitude assigned to them by Bougainville. We saw at the same instant four small islands to the eastward: I had passed to the southward of them at midnight, at the distance of a league; I named them *Monagos* (the Monks).

From this shore I bore away for the north cape of New Britain; but, on the 10th, scarcely had the day appeared, when I discovered other islands to the south-south-east*. I ran the same day, and the day following, the length of the most westerly, at a reasonable distance. I took all possible measures to satisfy myself of its true situation, by taking bearings and distances, and I can be positive, that its north coast is eleven leagues long. The island is, without doubt, large in proportion; for beyond the plains, which extend themselves as far as the sea side, many tolerably high mountains are seen; the chart represents the perspective. Beyond this island are four other low islands the coasts of which appear in

* It is in the manuscript *sudoeſte*: it is necessary, without doubt, to read *sudoeſte*, or *sud-ſueſte*, south-east, or south-south-east; all that follows proves, that this island could not lie to the west of the frigate.

succession: they are covered with trees; the shore is bold, and free from reefs: I doubt not, but in the channels which separate these islands, good anchorage may be found, where ships might be sufficiently sheltered from the sea and the winds.

The inhabitants of these islands seeing me on the 11th, at the distance of two miles from their most easterly point, approached in their canoes, to the number of twelve, beside many others which did not put off. Curious to know what was the character of these islanders, I brought to; they came close alongside, but would not come on board; they only entreated us with great earnestness to give them some food, and pressed us to go and anchor between their islands. Some cocoa-nuts were thrown to them from the frigate, and a few pieces of biscuit, which they scrambled for with avidity, and almost fought with each other to obtain them; but when they perceived at the poop a net containing some garden stuff, they made every effort with long hatchets to get it into their possession. All this was a convincing proof of the sad condition in which they lived: so far, therefore, from expecting refreshment from these islanders, I saw they had more need of it themselves than I had. I was therefore, from necessity, obliged to abandon them to their miserable lot. I could observe no difference between them and the negroes of Guinea: colour,

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hair, lips, and eyes, all appeared alike in every part. Every weapon these people had were darts or arrows, without bows for shooting them; they were armed at the point with very clumsy flints: they had also some fishing nets, which furnished them doubtless with the principal food on which they subsisted.

Pursuing my course on leaving this island, which I named *Don Joseph Basco*, I discovered in the evening of the same day six others. To the more westerly of the two the furthest to the south I gave the name of *San Miguel*, and to the more easterly, that of *Jesus Maria*. Their coasts are undoubtedly more extended than I had concluded from the bearings I could take; for their mountains are very lofty, and the distance I was from them did not allow me to take in all the extent of these coasts.

I at the same time ran along the coasts of two other islands, at the distance of two miles: I gave to the more westerly the name of *San-Gabriel*, and to the more easterly of *San-Raphael*: between these and the two preceding there were two very small ones; that to the north called *Isla Baxa* (Low Island); and that to the south *Isla de Horno* (*Oven Island*); and then steering to the eastward, I found myself at midnight to the northward of three islands, which I called *Tres Roys* (the Three Kings).

The 12th I passed a very little islet, bearing south 38 west, distant six leagues.

The same day at half past one in the afternoon we descried another island to the north-east, three degrees east, at the distance of eight or nine leagues. It offered to our view a very high mountain, and suspecting it to be the Island of Matthias, which the French chart places to the north of New Britain, I steered to the east-north-east, that I might get near to it, and satisfy myself as to its situation. At six o'clock in the evening the mountain bore from us north 22 degrees, distant from six to seven leagues; and its situation, determined after our bearings, left no reason to doubt, but that it was the Island of Matthias.

I continued to sail in the same direction, with the design to get a sight of the *Ile Orageuse*, (Stormy Island), placed more to the east upon the French chart. This island is certainly properly named: all the night we experienced heavy gusts of wind and a high sea. Yet on the 13th, notwithstanding the fogs, and the frequent showers of rain, which began from the first dawn, we discovered, to the north-west by north, at seven leagues distance, another island, which appeared to us smaller than the *Ile Orageuse* is represented upon the chart; but its distance, added to the circumstance of the horizon being far from clear,

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might make it seem smaller to us than it was in reality. I at last judged this to be the Isle Orageuse, or a little island very near to it.

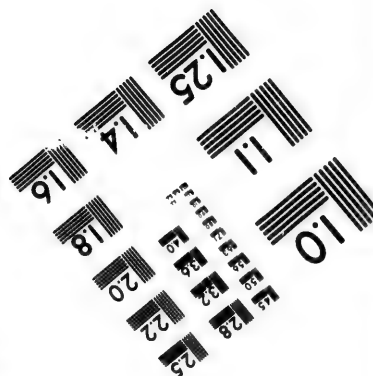
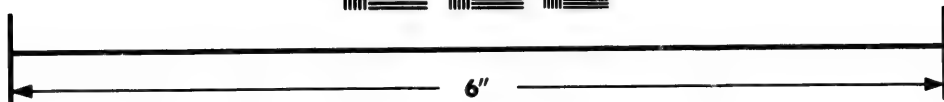
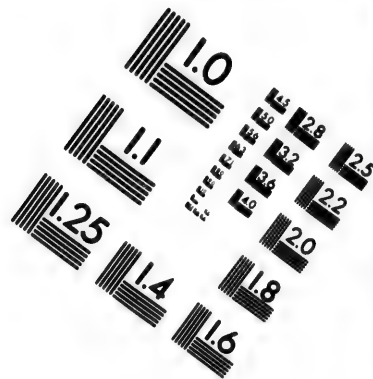
Since, according to our bearings and distances, I found the south point of the Island Matthias, was in latitude $1^{\circ} 23'$, and that the French chart places it in $2^{\circ} 10'$, I thought I ought to give up the last, and I have placed the island upon my chart in the latitude concluded on from the observation I had just made at noon, and which I believe very exact*. I proportionally corrected the latitude of Isle Orageuse. The position of these two islands, so near one to the other, has, no doubt, been subject to the same mistake.

Comparing my longitude by account of the Island of Matthias, $144^{\circ} 20'$ east from Paris, with that of $145^{\circ} 35'$, which is given to it upon the chart†, I found that my state of it, according to the chart, was in an error $1^{\circ} 15'$ towards the west. Supposing, that those who discovered this island had exactly fixed its distance from

* The latitude of the south point of the Island of Matthias is $1^{\circ} 38'$ upon Bougainville's chart.

† The longitude of the same point is, upon the same chart, $145^{\circ} 10'$. The Isle Orageuse is represented on it double, the middle of the more easterly island is there $1^{\circ} 45'$ lat. and $145^{\circ} 37'$ longitude. Bougainville saw these islands, but he paid no attention to them.





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Cap de Bonne Espérance of New Guinea*, I corrected the longitude $143^{\circ} 39'$ east of Paris, that I had obtained at noon, against that of $144^{\circ} 54'$, which resulted from the longitude of Isle Matthias. I distributed this seasonable correction over the position of the islands I had precedently discovered. I fixed therefore my new point of departure in longitude $144^{\circ} 54'$.

The same day, the 13th of January, we had sight of a large coast: the horizon in the south, both to the east and west, was loaded with heavy clouds, with fogs, and tornadoes.

If the weather cleared up, it was but for a moment, it changed again, insomuch that it was impossible to distinguish what land I saw. I believe, nevertheless, that it was the coast of New Britain, as well because that the following days we continued to discover parts of land which could only belong to a large island, or a continent, as that in coasting these lands we distinguished very high mountains, such as are very rarely seen in small islands.

The 14th, in the afternoon, we saw to the south-west a very lofty mountain, and a coast which extended a good way to the eastward and

* Modern navigators would rather be governed as to the distance of this island from Cap Saint George, the geographic position of which is better determined, than that of Cap de Bonne Espérance of New Guinea.

westward. There was no doubt but this was part of the coast of New Britain. I could not assure myself of its exact bearing, being at the distance of twelve leagues from it. I passed at the same time near three islands, which bore from me south by west. The most northerly, which I called *San Francisco*, was at two leagues and a half distance; that in the middle, I called *San Josepho*, and the third *San Antonio*: the last was seven leagues and a half distant. After having passed them, we saw at midnight a little island bearing east by south 10 degrees; I called it *San Pedro*.

The 15th we saw two islands; at noon they bore south-west eight degrees south, distant ten leagues. The more westerly was called *San Laurent*, the more easterly *San Blas*.

From the 15th to the 17th, the winds were light and variable, between the north and west: on the 17th, we got sight of a small island, which I named *San Lucinto*; it bore from us west 32 degrees south, at the distance of ten leagues.

The 18th we discovered, at eight miles distance, three other islands, one of which lay north and south: the most westerly was named *San Rosa*; the large one *Isla del Refugio*; and the small one, very near to the former, *La Madelena*. The same day we saw, to the south-west of the *Isla del*

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Refugio, a coast covered with very high mountains; I supposed I might be at twelve leagues distance from the shore, its extremities bore north 65 degrees east, and south 65 west; this is the only means I had to determine the position of this island. I doubted at first whether this land did not make part of New Britain; but I was afterwards assured that it was the island of *Saint Jean*, which the French chart represents as a large island, and which it places in the parallel where I observed it*; so much the more was I assured of this, as we had seen an infinite number of little islands since that of Matthias, and we had seen none the latitude of which and distance from the Island of Matthias could occasion it to be taken for the Island of Saint Jean.

The 19th at sun rise we saw, at the distance of six leagues, two very low islands, both of which ran north-west and south-east; they were separated by a very narrow channel, which was open

* It is desirable to know what was this French chart by which our navigator directed his course. The Isle Saint Jean is placed, according to a chart by Fleurieu, in $3^{\circ} 45'$ of latitude, $150^{\circ} 32'$ to the east of Paris; but according to the Voyage of Carteret, (French edition in 4to) the chart of which is on a larger scale, the latitude is $4^{\circ} 19'$, the longitude $153^{\circ} 3'$ east of Greenwich, $150^{\circ} 43'$ east of Paris. Carteret had had a sight of this island. The author of *Découvertes des Français*, page 286, is decidedly for $4^{\circ} 0'$ of latitude, and $151^{\circ} 30'$ east of Paris.

to the south west; we named them *Las Cai-*
mans.

The same day at sun-set we had sight, to the south, of two islands; the more northerly was very small; I named it *Santa Anna*, and the other *Santa Barba*; according to our bearings the coast of the latter was seven miles in length.

The 20th at day break the middle of a great island, to which I gave the name of *Don Manuel Flores*, bore south 5 deg. west, thirteen leagues distant; a pretty high mountain was remarked on it; its coast appeared to us to lie east-south-east, and west-north-west to the extent of six leagues.

At eight o'clock in the morning we had a view of nine islets, which I did not doubt of being L'Ontong-Java of the French chart. The latitude of these isles is precisely the same as that which is given to the centre of Ontong-Java upon the chart. I ran directly down for them, that I might get as near them as possible; and I observed they were surrounded by a sand bank which could only be discerned at the distance of two miles from the shore. Near the edges of this bank here and there, at a little distance from each other, may be seen above water several little rocks, not far from the bank itself.

On the south side of this bank there is a narrow opening, abreast of which we found the latitude $4^{\circ} 53'$; we were only at two cables length

distance from this entrance; it leads to a gulf where the sea is perfectly smooth, and where a secure harbour may be found, if it be required to stay to take in wood and water. This gulf is sheltered to the north by the islets; we gave it the name of *Puerta la Princesa*. An exact account of this harbour is given on our chart; we passed by it near enough to answer for the exactness with which it is drawn*.

From these islets, which are not a mile from one another, came out more than sixty canoes, which approached us within less than a musket shot; but as the wind was favourable, I did not

* Ontong-Java (or Jaba, it is the same thing to the Spaniards) was discovered, we are told, in 1616, by Le Maire and Schouten. They counted 12 or 13 islands; but they had by no means so favourable an opportunity of reconnoitring them closely as our navigator. At a distance they could not have perceived the very low slips of land, which joined two parts of the same island, and of one island only they made two. In 1767, Carter discovered in these same seas nine islands, which he believed to be the Ontong-Java of Schouten. These islands extended from north-west by west, to south-east by east, for the space of about fifteen leagues, and one among them is very extensive; whereas Ontong-Java has not three leagues of extent, and all the islands which compose it are very small. Notwithstanding all this, we shall endeavour to prove, that the nine islands of our navigator, those of Carteret, and those of Le Maire and Schouten, are only one and the same group, different from the Ontong-Java of Tasman.

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think I ought to lose time in waiting for them. I filled my sails and stood on my course, and they returned to their islets, upon which it appeared to me impossible that human creatures could subsist. We saw a pretty considerable number of palm trees, which, without doubt, produced them fruit, and this with the supply from fishing enabled these creatures to drag on a miserable life.

After having quitted Ontong-Java, I continued my course with gentle and favourable winds during the day, but violent through the night, which obliged me to keep a good look-out, and to recommend an equal vigilance to my officers, and ship's company. They easily conceived the greatness of the risks we run; in consequence, no sooner did an object present itself in the horizon, than it was announced; the island was seen, and the danger was avoided.

I sailed on till the 22d, without having the sight of any land; but that same day, the night being dark, we heard at ten o'clock a frightful roaring in the north-east, and we saw, broad on the ship's quarter, and at no great distance, the sea quite white with foam. I was obliged to stand to the south-west, until we ceased to hear the noise of this shoal, which I named *Le Ronfleur**

* Fleurieu thinks that this Ronfleur is the same rock as the Candlemas Shoals of Mendana, which is not very improbable.

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(the Snorer); I afterwards laid the ship's head to the eastward as it was before.

If the divers incidents which counteracted my voyage be considered, an idea may be easily formed of the constancy with which I have invariably aimed at two objects equally indispensable, and yet greatly opposed, the one to the other. My commission demanded celerity, and in consequence obliged me to crowd sail without losing an instant. On the other hand, the tornadoes under the line only take place in the night; the winds freshen then extremely, render the air dark and gloomy, and lance forth thunder and lightning. These winds were all day almost calm: I could therefore only avail myself of the night to make any progress. I met with land during the day, I met with it also during the night. Prudence without doubt would have dictated to me not to expose myself to dangers, which might in an instant frustrate the design of my voyage; but yielding too much to its sway would also have occasioned a delay irreparably prejudicial to the object of my commission. I took therefore the resolution to supply the defect of an idle caution, by opposing the most active vigilance to all the obstacles which might threateningly intervene, and to avail myself of the winds, as often as they should be favourable.

The remaining part of January the winds were faint,

faint, and blew between the north-north-west and the north-east; I could follow no other than an easterly course, or within two points of it. I therefore made southing in my latitudes, without it being possible for me to get to the northward, the wind coming constantly from that quarter, except a few puffs which blew from the west and from the east, and of which I took advantage, in order to near the line; but the calms were so frequent, that the longest run I ever made in twenty-four hours was seventy miles.

From the beginning of February the calms were more constant; from the 6th to the 17th, our greatest day's run was forty miles; it was commonly but from twelve to fifteen miles. These calms retarded me greatly; it was in vain I strove to pass to the northward of the line, hoping to get to the westward of the flats or shoals of Saint Barthlemi *: the light winds from the north, from the north-north-west, and from the north-north-east, forced me to follow so westerly a course, that I lost in longitude the easting I had gained, at the price of risks so multiplied. These reasons induced me to stand again upon a north-easterly course, hoping that a wind from the eastward

* Here it is guessed; the manuscript affording no intelligible sense; I believe, however, I have guessed pretty right.

might

might presently facilitate my crossing to the northward of the line.

As my voyage was so much prolonged, I had had, from the 20th of January, the precaution to retrench two ounces of bread of the ordinary allowance of those who composed my crew, besides one ounce lessened in every pound from the first instant of our embarkation; but on the 16th of February, seeing the weather grew no better, and considering that we had only been victualled for six months; that seventy pipes and forty barrels of water, which had been shipped on board us, did not suffice, or scarcely, for that space of time; that at the place where I then was, $3^{\circ} 32'$ south latitude, and $174^{\circ} 8'$ longitude east of Paris, there remained scarcely three months provision, and a very insufficient quantity of water, I concluded I was justifiable in still diminishing the allowance, which I did, reducing it from this day to two-thirds.

A circumstance which further increased our distress, was the innumerable quantity of cockroaches* with which our ship was infested. The biscuit

*The cockroach, cancrelas, or kakerlaque, is a coleopterous insect, very much resembling the chaffer or May-bug, but larger and flatter; it soils and devours every thing. It is called, as we are told, *ravet* in the Antilles; the cancrelas of the Ile de France, however, appears larger than the ravet of Saint Domingo; it is nevertheless as great a torment.

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weighed much less than when it was shipped : but that which discouraged me the most, was the condition of our water-casks ; we often found them empty, and not only had the water entirely run out of some of them, but others were wholly unfit for service ; these depredators had perforated the staves with holes, into which two fingers might be admitted.

Taking all these occurrences into my most serious consideration, I judged it was not possible for me to continue my course towards the north of the line, without putting into some port to replace the water I had lost. I could not flatter myself with gaining the Marian Islands in time ; the result of my reflection, therefore, was, that I ought to make for Solomon's Islands ; I reckoned them to bear west, at a hundred and seven leagues distance ; I hoped that the winds, which blew from the northward, would allow me to put in there, and that I might thence with more expedition and certainty gain the Presidency of Monterey.

I therefore made sail for Solomon's Islands ; but the north-easterly winds blowing without the smallest interruption, drove me gradually to the southward. The 20th of February, I found myself to be seven teen leagues to the westward of Cape Santa Cruz, or Guadalcanar. We then began to meet with breezes from the east-north-east and east, which occasioned

occasioned me to lose all hope of putting in at Solomon's Islands, and even of getting a sight of them. Being then in latitude 12° south, I was compelled to take the resolution of getting farther into the southern hemisphere, being persuaded that we should meet with some islands, at which we might relieve the extreme scarcity we were reduced to; and hoping, at the same time, that after having run down 20 or 22 degrees of latitude, we should meet with favourable winds for making to the eastward, a circumstance which I could not promise myself in sailing to the northward, unless I pushed on to 44 or 46 degrees, by keeping constantly close to the wind, which would have made me lose a vast deal of time; and even in adopting this course it would still have been necessary to put in at the Marians.

After these reflections, and others which incessantly tormented me, I took the resolution to lay the ship's head to the southward and eastward, steering such courses as the easterly winds might allow me to follow. The 26th of February I saw a small island; I ran down upon it, in hopes of casting anchor, and taking in water. The crew were overjoyed; it seemed to them as if this island were to put an end to all their wants and sufferings; their present mirth equalled the distress they had been in, but it was of shorter duration: getting within the distance of two miles,

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we saw clearly not only that there was no anchorage, but that even a ship's boat could not land. The island was in the utmost degree barren; upon its mountain, which was not small, a single tree was not to be seen. From the bitterness of our disappointment, we called it *Amargura*.

On the 27th, we discovered an island right ahead; upon it was a very high mountain, the top of which appeared burnt, but its slope, being covered with trees, presented an agreeable verdure. We could distinguish a great many cocoa-nut trees upon it; they increased the desire I had to put in there, but the faintness of the wind prevented me from going nearer than a league's distance towards the west side of it. From that side, however, came out many canoes, with cocoa-nuts and bananas: the trade of barter began immediately. The Indians, full of confidence in us, came on board; the one who had authority over the rest expressed the tenderest friendship for us; he danced upon the deck, and sang several songs: among other presents, he gave me a sort of large counterpane, resembling blotting-paper, but composed of two or three kinds of leaves, interwoven one upon the other, so as to give more strength to the composition. I was not behind him in civility, and he withdrew well satisfied. He told me, that this island was called *Latté*; that he was the chief of it; that it was fertile in fruits of different kinds,

abounded in fresh water, and that I might find good anchoring ground. This intelligence gave me much pleasure ; but in reality I saw no place where I could lie in safety. In the stretches we made round the island for a commodious anchorage, we discovered to the east-north-east, at the distance of twelve leagues, other islands, less high, but of greater extent, leaving several channels between them ; the wind was faint, but favourable for approaching them. The perspective of these islands promised me abundance of relief ; I bore down upon them.

Calm, and now and then light contrary winds, which I had had from the first of March, lasted many days ; but at length, on the 4th, after several tacks, I ran up a small entrance which these islands form to the north-west, and anchored in forty-five fathoms water, a short distance from the land. From our anchorage might be seen, within the gulf, houses and abundant plantations of banana and cocoa trees, very flattering appearances of water, and this last was nearest our hearts. In short, we perceived, in the midst of this group of islands, divers harbours where ships might be sheltered from sea and wind, so that we persuaded ourselves we were verging to the end of our wretchedness.

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and considerably I got an offing while heaving the anchor in sight, so that it might be ready to let go again. As soon as it was hove up, I tacked again for the port, and on the 5th, at day break, I anchored in thirty-eight vares, (about twenty-three fathoms*) sandy and stony bottom, two cables length from the shore, in the creek where the day before I had seen houses.

In the course of the time I lost in getting close to these islands, there came every day alongside of us from fifty to a hundred canoes, bringing us hogs, fowls, bananas, cocoas, potatoes, which had the taste of pap †; some of these potatoes were five vares (fifteen feet) in length, and their thickness equalled that of the thigh of a man of a full size; the smallest weighed three pounds. They offered us also cloths woven from the bark of a palm-tree, others of a finer make, and lastly, those cloaks or counterpanes resembling blotting paper, of which I have already spoken; they set the highest value themselves upon these counterpanes. All this traffic was carried on over the ship's quarter. The islanders, in exchange for their fruits,

* But I believe it ought to be thirty-eight fathoms.

† The Spanish word *popa*, or *papa*, signifies a species of panada made with milk, which is given as food to young children. It is allowable to suspect an exaggeration with regard to the reputed length of these potatoes.

and the produce of their manufactures, desired to have hatchets, axes, and other cutting instruments; but I forbade, under the severest penalties, the giving any to them, and I have reason to believe my injunctions were obeyed. They were therefore obliged to be contented with scraps of cloth and fluffs. My people cut their shirts, their trowsers, their jackets to pieces, and with these little rolls or bandages they procured themselves hogs and other refreshments. On account of this provision, I wholly suspended the allowance of meat, and reduced that of the bread to one half.

The Indians who came on board pressed me much to go into the middle of their archipelago; each of them shewed me his island, and assured me, that I should find water and every thing of which I had need: the *equis*, or captains, manifested the strongest friendship for me as they arrived, and I endeavoured not to be behind-hand with them. Many of them sat at my table; but they ate only their own fruits. I conceived these Indians were divided into numerous casts or tribes, seeing how many of these *equis* bore authority; yet I observed, on the other hand, a good understanding and affability among them.

We had visits also from the women; their countenances did not appear at all disagreeable to us. Their clothing consisted in a species of petticoat, which encircled their waist to the knees;

the men were dressed in the same manner. I admired the portliness of the latter; some among them, whom I had measured, were six feet four inches high, and lusty in proportion, and these even were not the tallest of the Indians. It is very certain, that the shortest among them equalled the tallest of my crew. In general, it may be said these islanders are tall and robust.

As soon as I had cast anchor, I received a present of fruits sent by the Tubou; and the messenger, as I was told, was his son. Of this name of *Tubou*, which the equis repeated with a very particular affection, it may be asked, what could it signify? I believed at first, that it designated the equi of the island near us, who necessarily had some pre-eminence over the other equis, seeing the respect manifested by all those who spoke of him. Whatever he might be, I gave the best reception possible to his son, with the view to conciliate his friendship, that I might meet with no hindrance in our arrangements for taking in water, but that he might, on the contrary, favour them with all his authority.

As early as eight o'clock in the morning, the frigate was surrounded with more than a hundred canoes: the cries of those who manned them, and who held their market around the ship, were so piercing, that it was scarcely possible to hear one another aboard. Nevertheless, at that hour they

apprized us that the Tubou was coming to make us a visit; as soon as he approached, all the canoes which were on the starboard side of the ship, retired to a distance. I received the Tubou with all possible civility. His age and enormous size had deprived him of the agility requisite for getting up into my ship; so much so, that it was necessary for his equis, whom I had considered till that time as little kings, to raise him by the shoulders, while he ascended the side. He was followed by his wife, whose countenance surpassed in beauty those of all the women we had seen upon this island; and I should almost have sworn on the spot that she was the daughter of some European, so striking were the graces I remarked in her; as she was at most in her twenty-fifth year, her youth added to her other charms. They both sat down upon the watch bench, and all the others profoundly prostrated themselves, kissing the feet of the Tubou. He brought me as a present, a boat* full of potatoes. From gratitude, I decorated both of them with a flame-coloured silk scarf, reaching from the neck to the waist, to which I suspended, by a carnation ribband, two piasters, bearing the stamp of the image of our august Sove-

* The Spanish term *canoa* is always translated by that of boat, but these boats of the South Sea were probably only canoes.

reign. I distributed at the same time several reals† with the like image, to serve, in the course of time, as irrefragable proofs of our having put into those islands. The subordination to, and reverential respect of the equis for the Tubou, were such, that no one among them dared to sit down in his presence; his son even, who before his arrival affected a majestic gravity, was now as obsequious as the rest. I may say with truth, that the Tubou scarcely deigned to honour them with one or two words. I conducted them to my cabin; they were struck with admiration at the equipment of the frigate, and the various things I shewed them. In short, quite satisfied with our reception, they went away, after having given us the most unequivocal assurances of the strictest friendship, and after a thousand kisses and embraces which the good old man unceasingly gave me.

To avoid those excesses which the crews of ships often give themselves up to when they go ashore, I published an order, by which I threatened with the most severe punishment any one, who should give to these islanders the least disturbance under any pretext whatever.

I cautioned my people nevertheless to keep upon their guard at all events; and to give to the

† The piafre contains twenty reals; the real is worth a little more than two-pence halfpenny English money.

Indians an idea of the force of our weapons, I directed a few cannon shots to be fired against the rocks; the fragments of rock and stone which the bullets and cannister shot made to fly about, inspired them with the greatest dread; they entreated me not to repeat the firing. This discharge, made in presence of twelve or fifteen hundred persons, produced the desired effect; it rendered our arms formidable in their eyes, and I hoped that, throughout, they would never put me under the disagreeable necessity of employing them hostilely.

On the 6th, I took from among my people fifteen picked men, well armed with pistols, swords, muskets, and cartridges, and I embarked with them in the long boat, armed also with swivels. We landed on the beach which I found covered with men and women, whom I compelled to keep at a distance, and arranged my men in order and under arms, at ten vares* distance from the boat; the swivels were pointed against the crowd of Indians, to be used in case we should perceive any hostile movement.

The son of the Tubou offered himself to conduct one of our people to a running spring of water, but, as after having walked half an hour and ascended a little hill, he told him it was as much farther still to the place, my envoy thought pro-

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per to return to the shore, where I waited for him. I however had a well dug upon the strand; when it was worked to a level with the sea, the water oozed into it, but it was not fit to drink. I directed another well to be dug at the distance of twenty vares from the beach; my object was to avoid weighing my anchor, and going with the frigate into the middle of the archipelago, where the Indians nevertheless assured me I should find good water in plenty. Many days would be required for moving my station, and I wished to make the best use of my time.

On the 7th I went in my long boat, with a well armed detachment, and accompanied by an Indian, to one of the places where I had been told I should find water; but this was at too great a distance from the frigate. I had a few casks filled, and I returned to the harbour in the resolution to renew the digging of the pit already begun. I went on shore the same day, always with the same precautions; the work of the pit-digging went on, which I left in a condition apparently to afford water the next day.

The Tubou or King came to pay me a visit in great state: the equis were ranged in two files, and the extremities of each file occupied by venerable old men; those who marched near the King were of this description. The Tubou, as a proof of his tender friendship, overpowered me with caresses, embracing

embracing me a hundred times. His attendants now seated themselves, forming a large circle, in the order they had arrived. Two carpets of palm were brought, the King sat down on one, and made me seat myself on the other upon his right hand. All kept a profound silence, only those who were near the Tubou, whose great age rendered them respectable, exactly repeated all his words. Presently, some roots were brought, with which, in a kind of trough, they made a drink, bitter enough no doubt, if it might be judged of by the countenances and gestures of those who drank of it.— This refreshment was served up in vessels made with the leaves of the banana tree; three or four young Indians offered the first to me and the Tubou; I did not however taste it, the sight was alone sufficient to disgust me. The islander, the nearest to the Tubou, pointed out those who were to drink of it, and none was served to any other person — They afterwards put boiled potatoes and perfectly ripe bananas before me: of them I ate some; a little time after I saw two canoes making towards us, filled with provision of the like nature, designed for distribution among my soldiers.

After this refreshment, the Tubou retired to his home; I returned his visit, leaving the first pilot at the head of my party, with orders not to allow any person to approach under any pretext whatever.

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The Tubou gave me the best reception possible, the Queen appeared soon after, preceded by eight or ten young girls, about sixteen or eighteen years of age; they were all employed in waiting upon her, some of them drove away the flies which incommoded her, and she leaned herself by turns upon the others; she was wrapped in several mantles, which considerably enlarged her size: She received us with a smiling countenance; and gracefully repeated the word *liley, liley, liley*, which signifies *well, very well, or welcome*. After this first, or ceremonious visit had taken place, I made but very few others to the Tubou, lest he should strip himself of all his clothes to put on me, for such was the manner of his conferring the most signal favours.

The King gave me two large gilt-heads* and one of his weapons which was nothing else than a staff of *acana*† painted of various colours. I retired to the ship in the hope of filling water the next day.

The 8th in the evening our pit was completed; we laded water to the great astonishment of the

* *Dos dorados*. The Spanish word *dorado*, taken adjectively, signifies *gilt*; substantively the translator knows no other signification than *gilt-head*, a known fish.

† This wood is not known by the translator.

Indians,

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Indians, but it was so brackish and bad that we were obliged to renounce the idea of shipping it for use.

The same day I paid a second visit to the King and Queen, who never failed to send me, every evening, an abundant quantity of broiled potatoes, they having without doubt obligingly considered the number of persons I had to feed on board.

As soon as I was convinced of the insalubrity of the water so near the shore, and had no hope of obtaining it at any reasonable distance by the same means, owing to the proximity of a rising mountain, I weighed anchor, and dropped it in another bay a league and a half or two leagues off. As soon as one of the anchors was out of the ground, its cable, which was used for the first time, absolutely gave way, the strands which composed it having all broken in two; the cable was found entirely rotten throughout its whole length, and unfit for service. I swept for the anchor but in vain. I could not remain there a long time, and the depth of the water left no hope of our being able to recover it again easily.

The new bay was perfectly sheltered from gales of wind and from the sea; I experienced this a few days after; for though it was very bad weather at sea, blowing from the north and north-west, we felt no effects from it otherwise than by a few puffs

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puffs which reached us in that direction. I anchored in thirty two fathoms, over a sandy and stony bottom; the banks which form the harbour from the north side defended us; all around the bottom was rocky.

On the 9th we began to water; it was only five vares distant from the shore. The work went on faster than I expected, the equis having ordered their Indians to roll our casks; but when the Tubou came, no person but himself durst give any order.

On the 10th, 11th, and 12th, we shipped all the water we intended to take in; an infinite number of canoes came nevertheless to the frigate to make exchanges, and their confidence in us was such that many slept and passed the whole night on board.

On the last of these days, the King invited me to an entertainment which he had prepared to give me; upon going on shore on the 12th, I saw, in the thicket or wood, a large open space which had been designedly cleared, insomuch that there did not remain a single piece of a trunk standing. A little after the Indians, two by two, repaired to the Tubou's house, carrying upon their shoulders long poles, from which hung a great many potatoes, bananas, cocoas and fish; the Tubou directed them to carry these to the newly laid out camp, and they made of them a heap in a cubic form, two vares in height.

The

The equis and the venerable old men conducted the Tubou to me as before, who took me by the hand, and led me to the newly formed circle, all the way attended by two thousand Indians. We sat down upon carpets of palm leaves prepared expressly for the purpose; all the people were allowed to do as much, but always preserving a distinction between the casts or families, the one not being permitted to intermingle with the other.

The King then made me an offer of all these fruits, and our long boat was accordingly filled with them. The porters being returned to their respective posts, a profound silence was observed while the King spoke; those whose age or dignity had given them the right to be seated nearest the King, repeated distinctly all his words.

I knew not to what all this tended, but nevertheless I ordered those of my soldiers who had the first pilot at their head, to be ready to discharge their muskets and pistols if they perceived any hostile movement.

There now advanced from the ranks a robust young man, his left hand upon his breast, and striking that elbow with his right hand. He made a thousand gambols upon the place opposite to the groups who were not of his tribe. One from among these last having presented himself to notice by the same gestures, the two began to wrestle, closing in with each other, body to body,

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body, thrusting and pulling backwards and forwards in all directions, with so much animosity, that their veins and muscles appeared inflated to an extreme degree. At length, one of the combatants fell down so violently, that I, at the instant, believed he never would have risen again; he did get up however, but covered all over with dust, and so abashed, that he retired without once daring to turn his head. The conqueror then came up to do homage to the King, and those of his tribe commenced a song, but I could not discern from their manner whether it was in honour of the victor, or to shame the vanquished.

These wrestling combats lasted two hours, one of the antagonists had his arm broken; I saw others receive terrible blows. While the struggle lasted, other champions advanced in the ring, their fists wrapped round with large cords, serving them as a kind of gauntlet, anciently used by the *athletæ*. This species of combat was much more terrible than the wrestling: as soon as the conflict commenced, the combatants struck each other on the forehead, eye-brows, cheeks, on every part of the face; and those who received these formidable strokes, became more impetuous and enraged: I saw some irrecoverably felled by the very first blow they received. The spectators throughout looked upon these combatants with a certain portion of respect, but all were not promiscuously admitted as champions.

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The women, those especially who waited upon the Queen, were spectators of this tournament. I saw that sex in a different and superior light to that in which I had before beheld them: I had before not considered them as disagreeable; but, on this day, they were adorned with all their best attire, having their mantles adjusted in neat plaits and folds, and becomingly attached by a knot over the left shoulder. They wore garlands, or wreaths on the head, and chaplets of large glass beads round their necks, the hair was pleasingly disposed in tresses, and the whole person perfumed with an oil of an agreeable odour; above all, the skin was so exquisitely clean, that they would not have suffered the smallest particle of dust to remain upon it a moment. They strove to engage my whole attention, and I may be allowed to say, they did not appear the less attracting on that account.

The King gave orders that certain women should fight with their fists as well as the men; and they did it with so much fury, that they would not have left a tooth in each others head, had they not been separated now and then. This sight touched me to the very soul: I begged the King to put an end to the combat; he acceded to my request, and all of them did me honour for the compassion I had shewn to these young females.

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The tubou afterwards directed an old woman to sing for our entertainment: from her neck was suspended a tin cruet, (probably to contain some fluid required to moisten her mouth and throat). She never ceased singing for half an hour together in one strain, accompanying her song with actions and gestures, which might have made her pass for an actress declaiming on a theatre. The diversion ended, we returned to the king's house: I found the queen there ready to receive me, which she did with her accustomed signs of benevolence. I asked her why she was not at the entertainment; she answered me by saying, these sort of combats were far from agreeable to her. The ties of friendship now became stronger than ever, insomuch, that the tubou called me his *hoxa*, that is to say, his son. I presently took leave of him and of the queen, and returned on board my ship. The shore all the way was covered with Indians, who offered thousands of caresses and kindnesses to my people for having condescended to be present at their spectacle. The conquerors took me upon their shoulders, and lifted me into my long boat. The tubou, who from his house saw the crowd, and well knew how much I suffered when the Indians mixed with my people, ordered his captains to drive away the intruders, and he fell into such a passion on the occasion, as to come out, with a great stick in his

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hand, striking all those who fell in his way. They fled into the woods, except two, more roughly handled than the rest, who were left for dead upon the spot; I am at a loss to know whether they recovered or not.

Every thing was in readiness for our putting to sea, and I resolved to do so on the thirteenth, had not a gale of wind from the north and from the north-west sprung up, blowing directly into the passage through which I was to go out. The wind grew stronger and stronger, and yet at our anchorage the sea was scarcely rougher than common; but notwithstanding all that, and though I had three anchors down, the sheet cable gave way, and I remained riding by the *hope**, and the small bower.

On the 15th, the wind fell, but while I was preparing to get under way to sea, the cable of the *hope* broke, so that I had only the small bower anchor to hold my ship. These accidents, added to the disappointments I had met with in the course of my voyage, deeply disconcerted me. All my cables were rotten, as well as all the haliards, sheets, tacks, braces, and lifts, in a word all the cordage of the ship†. This bad state of my rig-
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* This is the name of an anchor in Spain.

† A long detail of the damage and accidents of the ship's tackling and rigging is passed over, as well as an endless list of

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ring left me in the sad expectation of losing my last anchor; under such an occurrence, nothing but certain ruin was to be expected in so distant a clime. To supply the first pressing necessity, I had a cable carried to the nearest rock; it served conjointly with my remaining anchor to hold my ship for the time. I employed people also to endeavour to sweep for the two lost anchors; they laboured at the work for twenty-four hours without effect, the water was too deep.

The uneasiness of mind with which I was afflicted, prevented my yielding to an invitation from the tubou to be present at an entertainment similar to that which he had given before; but this prince who called me his son, and who without doubt loved me almost as much as if I had really been so nearly allied to him, never failed to send me every evening two baskets of roots, some fowls, and some fish. He ordered all the provision, which had been amassed for this intended second great fête, to be brought to me: he came himself often on board the frigate, he dined with me several times, and took his afternoon's nap on board.

On the 16th I tried to get out; the wind not being fair, I plied to windward, and though

of complaints of the author, which could not be amusing to the reader; besides, there are a great many faults in the manuscript, and I am not sufficiently skilled in nautical phraseology to correct them all.

the current counteracted my way, and the passage was so narrow that I had scarce room to tack, I found myself on my last stretch to windward of all the points; but a violent squall taking me a-head, drove me down towards the rocks between which I was sailing. I found myself now more distressed than ever: I had no other course to take than to return to my old harbour, to let go the anchor, and immediately carry a cable to land to hold me in the best manner possible.

On the 18th I sent my first pilot in the boat to find another channel, sheltered, it is true, by many islands, but which notwithstanding allowed us an easy outlet by means of the wind which then prevailed. The pilot, when returned, assured us that in the whole channel the bottom was good, free from banks, and the passage wide enough to tack, if necessary. I prepared, therefore, to go out the day following, viz. the 19th; and on that day at two in the afternoon I had gotten clear of all the islands; in my situation it was what I desired the most.

The Indians and the tubou did not expect this separation; it was without doubt affecting to them; the king and the queen took leave of me with the strongest demonstrations of sorrow, and the Indians in their canoes accompanied us till we were out of their archipelago.

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This harbour, which I named *El Refugio*, is formed by three considerably large islands, and by many other smaller ones. I gave to the whole cluster the name of *Don Martin de Mayorga*. The harbour is situate in $18^{\circ} 36'$ south, and $179^{\circ} 52'$ east of Paris. The safest shelter is to be found in it from all weathers: the winds may blow in vain with the greatest fury, the sea will not be the less calm; even a hurricane would not be felt. In going out between these islands, whether by the channel to the north-west, or by that to the south-west, there is water of fifty-five fathoms, with a stony, stony, or gravelly bottom. The same bottom goes all the way to the centre of the gulf, two cables length from the land, where the depth is but thirty-five or forty fathoms; the water shoals even to twelve or fifteen fathoms in some of the creeks. There are in this place neither shoals nor reefs, it is necessary, however, to choose an anchorage with the lead going, because in some coves the bottom is in part earth*, and part sand.

The fertility of the land is such, that its cultivation cannot fail to promise a favourable harvest. Every where are seen an endless number of cocoanut trees, beautiful banana trees, ranged in lines with the greatest order, numerous plantations of

* Should it not be *rock*, instead of *earth*?

potatoes, as may be conceived from the great quantities sent to us on board every day; other roots very sweet, and nearly of the same species, also abound there. Lime trees, sugar canes, fruits nearly resembling apples, oranges, and shad-docks.

In a word, two or three equis having once conducted me into a fertile part of the country, I admired the order with which every thing was disposed; no weeds were suffered to grow between the plants: their roads too were kept in repair with a diligence deserving imitation by the most civilized nations. Noticing the zeal they evinced for agriculture, I gave them some garden beans, some maize, some seeds of pimento, and of rice; explaining to them their uses, and assuring them, that they would grow and prosper in their so much better soil.

They also cultivate shrubs, ranged in the same order as the banana trees, the bark of which serves them for weaving their cloaks or counterpanes; they make of it also a sort of petticoat.

The conduct of these Indians, during the whole time of our stay in their harbour, testifies the confidence they reposed in us: it was not in my power to shew the same for them. I never went on shore but with an armed detachment, which inspired them with terror, in consequence they
never

never gave us any ground to complain, if it were not from their inclination to steal, a passion which the Indians cannot surmount. Every time they came on board, clothes, iron-work, whatever fell in their way, they considered as lawful prize. They drew out through the port-holes, or the windows, whatever was within their reach. They thieved even to the very chain of the rudder: I made my complaints to the king; he gave me permission to kill whomsoever I should detect in the act; and I was assured he had himself discovered and punished with death the authors of the complained of theft. Our vigilance was necessarily called into action; we surprised the islanders striving to tear away the new rudder chains; we fired a pistol at them, one of them fell dead on the occasion, and this was an awful lesson for those who were either on board, or alongside of the frigate; they said to themselves, or to one another *chito* (robber) *fama* (death).

I did all in my power to discover whether they had any sort of religion, whether they worshipped any creature or false god; we saw nothing which could make us even suspect any adoration of this nature.

We easily pronounced the words of their language, they pronounced those of ours also equally easy; a stay of a few months would have enabled us to make use of either indifferently. If my

misfortunes had not wholly absorbed my mind, I should have collected together numerous words of their tongue, which might have served as a vocabulary for holding a conversation with these Indians.

In the few interviews I had with them, I got the names of all the parts of the human body, and of the cardinal numbers up to ten.

They assured me, that two frigates had touched and refreshed at their islands, that the captains, with five or six officers each, had slept on shore; that they had received from them chaplets of glass beads, some hatchets*, and adzes.

On the 16th of March, when I was getting ready to depart, they told me, that two ships similar to my own were then making sail to the north-west; and they enumerated so many particulars of the fact, that it was impossible to doubt the truth of it.

The equis commonly wear a mother-of-pearl shell about the neck: they have the little finger of both hands cut off close to the root.

The tubou endeavoured in every possible way to engage me to retire with the frigate to the place of his usual abode, where he urged, that I

* It may be concluded from this that the frigates were Spanish, and probably also the two vessels about to be spoken of.

should find a much greater plenty of eatables. I should certainly have accepted his first invitation in the prospect of finding better shelter, and more especially for the greater facilities the change offered for putting my rigging in order, which circumstance other Indians as well as he did not fail to hold up to me and assure me of, but the nature of my commission did not permit me to follow my own inclination.

During the short stay I made in this harbour, I was not able to discover what were precisely the functions of the *equis*, how they were distributed, of what nature was the authority of the *tubou*, or how far his power extended. The last days in particular of my remaining in port my chagrin was such, that I thought of nothing else but how I should put to sea again. Otherwise it may be affirmed with truth that, except for the sad accident of parting my cables, which exposed me to a thousand dangers, I should never have made a more happy stay in port; since besides a sufficient provision of water, and the repairing twenty-five pipes empty and unfit for use, we found more refreshment for the crew, than we could have had in our own harbours: there was consequently no cause to regret the half allowance which I ceased to distribute; there was a superfluous provision for many days: the scorbutic, who by the surgeon's report were in a desperate state, reco-

vered their health while there. We, in short, met with a prince so much disposed in our favour, that he unceasingly clasped me in his arms, offering me at the same time every thing he had at his command.

Departure from Port Refugio, in the Islands of Don Martin de Mayorga, in latitude $18^{\circ} 38'$ south, and $179^{\circ} 52'$ east of Paris.

The 20th of March, having gotten clear of all the islands, I kept close hauled with the wind from the east-north-east, running to the south-east, or to the points of the compass nearest. In this course we discovered, bearing south $60^{\circ} 30'$ east, a very elevated island, distant fifteen or sixteen leagues; and at sun-set, three other islands were visible, extending from the south to the west-south-west, five degrees west, and five degrees distant from the most easterly.

This view obliged me to put about at nine o'clock at night. At one o'clock I again tacked to the southward, to get near to these islands. We perceived in the islands nearest to us above forty-eight fires.

The 21st, at sun-rise, we counted ten islands on the starboard hand, and six on the larboard: we crossed to the southward of them by the large channels they form between them. We saw none
a-head

a-head of us until arrived in a vast gulf we discovered, at the distance of about five or six leagues, an infinite number of islands, which described a circumference to a great extent, the centre of which we occupied. In crossing one of the straits formed by these islands, we saw the bottom; by the lead we had five fathoms, but for an instant only; the moment afterwards the depth increased.

Seeing myself surrounded by so many low islands, or little islets, which left numerous channels between them, I attempted to get out by some one of these openings; but on approaching them we found them obstructed by furious breakers, which did not allow me to get out to the southward. I resolved to stand to the westward towards that very lofty island we had seen the day before at a great distance. I did not doubt but I should be able in its vicinity to explore a way out of this archipelago.

As soon as the sun rose, various canoes arrived successively after each other, loaded with the same fruits and provision as those of the islands I had just quitted. The marketing began; shreds of cloth were the price of their commodities.

The tubou of these islands sent me two hogs, and some cocoas: he invited me to go to the island where he resided. He came afterwards himself

himself aboard; he assured me, that he would give me the pleasure of a game at wrestling, and that he would direct a pile of potatoes to be made for me as high as my mast. He appeared to be jealous of the favourable reception we had met with from the tubou of Mayorga.

I gave him reason to hope, that I would satisfy him as soon as I should get to the islands a head of us: but they all agreed in telling us, that the passage was shut up by sand banks, and reefs, and that on the contrary, I might find a good bottom in steering my course by the tubou's island and the high one towards which my ship's head lay.

Although every one testified, that this great equi was the sovereign of forty-eight islands, which they named even very distinctively, yet I could not perceive, that they manifested the same reverence, the same respect for him, as were shewn to the tubou of Refugio Island. No sooner was he on board, than he put his mother-of-pearl shell about my neck, in token of strict friendship; and after having passed five or six hours on board, he retired within one of the islands, hoping I should give him the meeting the next day.

I coasted many of these shoals, and at sunset I was six leagues to the eastward of Saint
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topher*, clear of all the little low islands: but as the wind freshened from the east, I kept all night under very little sail, that I might not expose myself to run unawares upon one of the islets.

I gave to all this group of islands the name of *Don Joseph De Galvez*. The southern cape of the island of the tubou, lies in $19^{\circ} 39'$ of latitude, and $179^{\circ} 33'$ of longitude east of Paris.

The 22d, at day break, I crowded sail, running close upon a wind to the south, or as near as I could lie; and in following this course we saw before us two islands, which I named *Las Culebras*, The Snakes; within them was discovered a great sunken rock, the breakers on which we observed at a great distance; it was five leagues from us.

The winds were mostly from the east, inclining to the north-east. Driven forward by them we continued our voyage with a more composed mind, being delivered from the dangers to which we had been exposed, sometimes by islands, sometimes by shoals. We saw nothing till the 24th, but this day we discovered (to the southward and westward,) at the distance of seven leagues, a

* What island of Saint Christopher is this? Is it the lofty island of which he has spoken, and to which he gave this name? He should have informed us.

small island by itself, which I named *La Sola*. The 27th, we perceived another to the west-south-west, three degrees west, at the distance of ten leagues. I gave it the name of *Vasquez*.

The night between the 27th and 28th, the wind became violent, and the sea very high. At midnight I was obliged to bring to till day break: the weather then grew serene, and I stood to the westward, with a light breeze from the north-east.

The 29th, finding myself in $25^{\circ} 52'$ south latitude, and as I supposed in $179^{\circ} 17'$ to the east of Paris, the wind veered to the westward: I availed myself of it by steering south-east-by-east, desirous to get more to the southward, at the same time to make easting in my longitude. I followed this course till the 3d of April, when, in $30^{\circ} 0'$ of latitude, and $174^{\circ} 22'$ longitude west of Paris, the wind became almost entirely calm.

Thus circumstanced, and upon continual complaints being made that the ship's bread was not eatable, I resolved to look at it myself. When I saw the state it was in, I could not but consider myself as placed in the most dreadful situation, to which any human being could be reduced, who sails in unknown seas, without hope of any succour. I never can look back to that sad moment, but the recollection of the afflicting picture

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ture, which then struck my sight, again rends my heart in pieces. I can declare with confidence, that if God had not supported me in that sorrowful and trying situation, I should have sunk into the deepest despair, seeing no prospect whatever of continuing our voyage.

I called Don Joseph Vasquez, the first pilot, to me, Don Juan D'Echeverria, the second; as also all the warrant officers; and I appointed Don Pedro Carvajal, the surgeon, to make the written report of the council we were going to hold, and of the deliberations which might be taken thereon.

I led them one by one into the bread room. We there found millions of cockroaches: it is necessary a man should have seen them with his own eyes, to have an idea of the number of these insects. These pests had so much infested the ship, that the holy father, who officiated as chaplain, was obliged to have recourse to exorcisms more than once. For my own part, I had the precaution to distribute in the cabins, bread rooms, and in every part of the ship, pots* smeared on the inside with honey mixed with sugar: every day brought me a bucketful of these insects. I consumed in this manner almost

* In the text, *spitting pots* are made use of.

all my honey, and their number did not appear diminished.

The bread, at first opening the room, seemed untouched; but near the partitions, all the biscuit had disappeared, and the floor presented nothing but a mass of bran and dust. In regard to the diminution of the allowance which I had ordered on the 16th of February, and to the retrenchment of an ounce in every pound, which had been made even from our first departure from Sifiran, there ought still to have remained three hundred and twenty-nine arrobes* of bread, without counting the other provision, which were in plenty enough: but on that unhappy day I saw myself reduced to two large binns of dust rather than bread†. I ordered the three casks of reserve to be opened, which had been well hooped and pitched in the seams: they shewed no appearance of having ever held any bread; they were filled with cockroaches only.

I immediately took the precaution to pick out all the bread possible, and to lock it up in the arm chests, and in that which contained the ship's colours. It was weighed, and was found to be

* The arrobe weighs twenty-five pounds; the pound is 16 ounces.

† Much is abridged here from the original.

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forty arrobes. In the next place, I ordered the potatoes which the ship's crew might have, to be collected together : but as it was fifteen days since the provision had been given out, there could scarcely be two baskets full collected. Thirdly, I ordered all the hogs to be killed, as also all the other animals, except some few fowls designed for the use of the sick. I kept for the same service, too, what little honey remained out of the stock I laid in at Sisiran. The fourth precaution I thought it necessary to take, was instantly to suspend even the allowance of bread, and to distribute to every one of the crew, a small ration of the potatoes, with which I had supplied myself from the Indians, three ounces of pork, and one of rice. I had no other object in all this but to preserve their lives, till I should be in a condition to afford them greater succour. Lastly, I resolved to share with them my own provision, reserving for the last resource the two chests, which I considered as sacred.

After having taken all these resolutions, I held a council with the officers I have before mentioned. I represented to them what I had done since the 20th of January, what bread there ought to have remained in store, and what actually did remain. I told them, that I should the more readily communicate to them the precautions I intended to take, as they had themselves been subjected

to the retrenchments which I had believed it necessary to make, retrenchments which had occasioned my being considered as a tyrant, as having an unfeeling heart, as a man who had thrown off every sentiment of humanity; that we were then seventeen hundred and sixty leagues from Peru, twelve hundred and forty from Guam, in the Marians; that the winds would be favourable for following either of these routes, except some calms or contrarieties, which always might be expected in such voyages; that they had the state of the provision under their own eyes; in short, I begged of them to declare what they would do, if they had the command of a ship under similar circumstances. They all unanimously answered, that death only could be worse than the condition we were then in; that of the two routes proposed, although neither the one nor the other held out much hope of safety, yet, that it was not possible to dispense with the preference for the Marians, trying at the same time if some relief might not be had at the islands of Martin De Mayorga, concluding that we had not provision for a month. The first and second pilot supported all that had been represented to me; I myself being persuaded that their advice was the best, but above all, being unwilling to contribute to the loss of so many unfortunate persons, or obstinately to oppose what appeared

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appeared to me to be most for the interest of the king, gave orders for steering to the northward, with a view of getting forty leagues to the eastward of the islands at which I had already touched, and where I hoped still to find some refreshments. This resolution I did not take, however, without a sensation more painful than that which accompanied the inspection of the bread and other provision: I would have preferred death to standing again to the northward; and if I had not allowed myself to be dictated to by calm reason, I had taken the mad resolution to have pursued our voyage to the eastward. The calmness of my mind now forsook me; I was far from experiencing that tranquillity of soul, with which I have often endured an infinity of vexations and crosses in the very dangerous voyages I have undertaken for making new discoveries*. The reflection, that we could not take any other step, was not sufficient to pacify me, especially when I recollected, that this discovery of our wretched condition took place just as we had overcome the difficulties of our navigation, when in short we had reached a latitude in which we could rely on favoura-

* What services would not this navigator render to geography, if he thought proper to communicate his discoveries to the public!

ble winds, such as I counted on for speedily and successfully completing our voyage. It is certain, however, that if the idea had occurred to me a fortnight later, of looking myself into the state of our provision, our greatest hope remaining would have been only to breathe on some desert island, had we met with such a one. And in our actual situation, if the refreshments the Indians furnished us with had been less abundant, there would have been no other course left me, but to have sought the first land whither we might betake ourselves as to a refuge. It was then, in truth, an interference of providence, by which we found the islands of Mayorga, whence we had drawn such powerful and timely relief.

With variable winds, which blew from every point in the horizon from the 4th of April, I continued my course to the north, or as nearly so as I could between that point and the east. The 9th a breeze from the south-east to the north-east began to prevail: I took advantage of it to get forty leagues to the eastward of the islands, in order to find them the more easily, in following their parallel.

On the 16th the wind moderated, the 18th it freshened, accompanied with dark clouds and heavy rains; we were obliged to lie to all the night. At day-break we ran down towards the islands, but the current had carried us some minutes

to

to the northward; the bad weather prevented us from taking any observation; these islands besides being very low, we did not perceive them. We saw to the north-west the island which is to the south-west seven degrees south of the island of Latte, and being nearer it, we made Latte at the distance of six leagues. It thence resulted, that my reckoning was thirty miles astern of the ship, and consequently that we had passed between the two groups of islands, De Galvez and De Mayorga, at a little distance from both, but which the continued fogs, and a cloudy sky, had prevented us from seeing.

As the only hope which supported my sailors was to be able to gain the islands of Mayorga, I hauled my wind as close as possible, and reefed my top-sails, but the sea was high, the wind violent, and the night dark; I was therefore obliged to give up the idea of making these islands, persuaded, that I could not approach them (which besides was very doubtful) without losing many days. My crew, however, grew disheartened at the unhappy state they saw themselves in; their weakness was so great that, in order to hoist a top-sail, it was often necessary the men from the fore-castle and the quarter deck should mutually assist each other. The most rigorous diet of an hospital could not have enfeebled them more. To raise their spirits, I desired them to consider, that by the

course we held, we should infallibly fall in with other islands, where they might recruit their strength; that the winds were favourable, and that we advanced with flowing sheets every day towards the termination of our sufferings. These reasons composed them, they took patience.

On the 21st, we discovered to the north-north-east, and to the east-north-east, two islands, which I named *Consolacion*, because my crew derived comfort from them, being thence provided with sweet potatoes, pigs, cocoa-nuts, bananas and fowls, which the natives brought us, during the thirty hours I remained on their shore. If the weather had been a little less unfavourable, our supplies had been more abundant; the crew, however, by barter and exchange, in which their clothes were so little spared as to endanger their stripping themselves naked, made provision for more than eight days; our sailors again recovered their strength, and were in a better condition to support the greatest misfortune that yet awaited them.

As on our approach to the island we saw coming towards us a great number of canoes laden with provision, I suspended the scanty allowance which I furnished from my own store: it is easy to conceive the object of this parsimony.

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The Indians of these islands speak the same language as those of Refugio, their character of mind is the same. Their confidence in us was such, that nineteen among them slept on board without our being able to prevent them; and the following day we were obliged to have recourse to force to rid ourselves of their company.

They were desirous of engaging me to land in their island, where they said they would exchange with us a great many large hogs, the smallness of their canoes permitting them only to ship the least; but as my time was precious, I satisfied myself in seeing that no one neglected himself, and that all provision was made of which the circumstances allowed.

The 22d, at night, I steered to the north north-west, with a light wind from the north*, and in this course I discovered, on the 24th, another island, which I named *Maurelie*. The wind became calm, except a few squalls, and some transient puffs from the north, which prevented my making the island before sun set: a south-east wind then springing up, I got within three leagues distance; but the night, and this distance, too great for the little canoes of these Indians, made

* There is some error here; I cannot believe that with a wind from the north the Spaniards could have sailed to the north-north-west: it ought to be read, without doubt, a wind from the north-east, or a course to the west-north-west.

two of them that were sailing toward us go back, laden no doubt with refreshments.

The winds continued to blow from the first and second quarter, (from the north to east, and from the east to south) sometimes fresh, sometimes so faint that they lulled at last into a calm. I availed myself of every favourable moment, and on the 5th of May I was in latitude six degrees.—In this position we found a very low island surrounded by a sandy shore, which terminated in an impenetrable reef, near to which I could find no ground with a line of more than fifty fathoms. The island was covered with a thick plantation of *cocoa-nut trees. This sight gave the more pleasure to the ship's company, as the provision obtained at Consolacion Island were exhausted that very day. I sent the long boat armed, to bring us, if possible, a good supply of cocoa-nuts; the breakers of the reef prevented her landing; the frigate, nevertheless, got so near the shore, that the natives spoke to us from the heights; but we saw no means of getting closer. However the Indians launched their canoes not without extreme difficulty in consequence of the obstacle of the reef. They reached the ship in great numbers, but the difficulty of the navigation had not allowed them to load their canoes

* It will be seen presently that this island was called *Isla del Cocal*. Cocal signifies a plantation of cocoa palms.

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with any considerable quantity of cocoa-nuts. They tried to tow the frigate, by making a number of lines fast to her head, and rowing altogether towards the island, whence they threw ropes also to haul us in towards the shore. Finding after a trial of six hours that they had not made any progress, and expecting no success at last, I set sail to the north-west.

The inhabitants of this islet already began to vary the pronunciation of several common words from the other islands. They came on board so besmeared with paint, that a man might have been tempted to take them for the images of demons.

The greater part of them had beards so long as to hang down upon their breasts. Near the cocoa-nut plantation was so great a number of huts, disposed in such excellent order, that the population might reasonably be thought considerable.

On the 6th I felt obliged to reduce the allowance of bread to five ounces, the pork to three, and the beans to two, all which I took out of my own provision, there being none in the King's stores; and although I thought it impossible that my crew could be supported upon ten ounces of bad victuals, yet the sad manner in which the ship was provided did not allow me to afford them more.

The

The same day, at night, we saw another island, flatter, but larger than the preceding; I called it *San-Augustin*: I left it to the south-west at the distance of six leagues.

On the 13th, in re-crossing the line, we had squalls from every point of the compass. All the remarks I had made on the state of the horizon, after leaving Cocal Island, served to persuade me, that we had left to the east a great deal of land, which, without doubt, along with Solomon's Islands, forms a string of islands more or less open to the south of the equinoctial line.

During the short time that the allowance of bread was limited to five ounces, there was not one of all the crew but complained of a weakness in the stomach. All were so feeble, that the hands of the fore-castle and quarter-deck together could with difficulty hoist the sails; this often obliged us to work the ship in a more disadvantageous manner, than we should otherwise have done.

On the 22d I reckoned I was upon the flats of St. Barthelemy. Prudence would have required, without doubt, that I should sometimes lay to during the night, the more so, as the wind was not only brisk, but sometimes very strong: yet I was too much affected by the melancholy condition of my people, the greater part of whom were attacked with the scurvy, occasioned by the bad quality of

the bread. I was therefore not willing to lose a moment; I crowded sail, and the extreme vigilance I recommended to the whole crew supplied those precautions, which I should have taken under other circumstances.

On the 24th our latitude was $13^{\circ} 16'$ north, and all the dangers were over. I then steered west-by-north for Guam, the capital of the Marianas, where on the 31st I anchored in the road of Umata; and I received there, without delay, the relief necessary for re-establishing the health of my crew.

As I had only one anchor, which was too little to trust to in the road, I sent an express immediately to Don Philippe Zerain, governor of the island. I communicated to him the then state of my ship, and the object of my commission; I entreated him to put me as speedily as possible into a condition to set sail again; I declared to him, that however worn my sails and rigging might be, I was nevertheless resolved to make for New Spain, in order to deliver into the hands of the viceroy of Mexico the important dispatches, with which I was entrusted. I added, that I hoped he would facilitate my obtaining the indispensable supplies necessary for so long a voyage: that I did not ask for those articles of food which were customarily furnished to the King's ships (they could not have been obtained in the presidency) but those only
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which could be collected in the island, requiring only that their quantity on the whole might be equivalent to the ordinary victualling.

The governor would himself be the judge of all that was necessary to the success of my commission. Conceiving of how much consequence it would be, should the violence of the wind blow us out of the road, and seeing my crew totally bereft of provision, he sent a temporary supply on board for fifteen days in rice, maize, and hogs, without discontinuing the daily refreshments furnished us for the recovering the health of the scorbutic, and enabling the crew to undertake a new voyage. He sent also to another presidency, at ten leagues distance from Umata, for a very old anchor: it actually wanted a fourth part of the stock, but I repaired it in a manner so as to render it fit for service, and by the help of a wooden anchor, which I constructed with the carpenter's assistance, we were at the end of eight days riding by three anchors, not however entirely to the satisfaction of the crew.

Nothing now remained to be done but taking in water, for assuring our subsistence, whether at anchor or under sail. Upon my first arrival I had taken care to see my casks put ashore one after the other: it was not long since they had been filled at the Mayorga Islands.

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found we had no more than two butts of water, and even one of these wanted full a barrel of being complete ! I requested the governor, the major of the fort, and my whole crew, to be witnesses, with their own eyes, of the enormous waste. Every one rendered thanks to God for having saved us from the imminent danger with which we had been threatened.

As most of the staves, and all the heads were eaten into throughout, we were obliged to repair them anew : but after this work, the butts, which before held six barrels, now held only four. We could therefore make up of these wrecks only forty-eight butts. The governor, comprehending the insufficiency of this supply, sent on board thirty *cannes*, each containing eight quartilloes*. This supply appeared to be incompetent to make up for the ravages we had reason to expect from the destructive insects. I assumed courage, however, hoping that in the abundance of our provision they would find wherewith to satiate themselves.

* Here is probably some mistake. According to Pauſton (*Traité des Meſures, Poids, &c.*) the thirty *cannes*, of eight quartilloes each, would have contained but a hundred and twenty-five Paris pints ; and more than the half less, according to Sejournant's Dictionary. This would have been a very weak supply indeed ! it is necessary apparently, to read *eight hundred or eight thousand* quartilloes.

The

The eatables which I obtained, without any cost to the royal treasury, were a hundred and forty anegues* of maize, sixty of rice, thirty hogs, twenty young bulls (or oxen perhaps) forty-five a——† of dry meat, of butter, of salt, of oil of the country for the lamps, of brandy made of cocoa nuts for the crew, sixty cocoa nuts for the hogs, and all the other articles of inferior consideration aboard a ship. Under more favourable circumstances, we should not have been satisfied with such stores. I made ready then, the 20th of June, 1781, for sailing to New Spain, in order to the final accomplishment of a commission, understood to be highly useful to the State.

Departure from Umata Road, in the Island of Guam, the capital of the Marian Islands, situate in 13° 10' north latitude, 21° 28' east of Manilla.

I weighed therefore on the 20th of June, and again experienced the uncommon weakness of my cables, especially of that which held the anchor

* The anegue, or rather the fanegue, contains very near four bushels and a half of Paris measure.

† This abridgement a—— signifies probably anegues. Yet the author employs it elsewhere for arrobes. The arrobe, for matters not liquid, is a weight of twenty-five pounds: thus forty-five arrobes would make only eleven hundred twenty five pounds; a very small provision indeed.

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the governor had procured for me. The anchor itself was scarcely in sight, when the cable broke; and as the ship in casting had increased her distance from the shoal water, it fell into a depth where the cable could not reach.

The season allowed us to steer a northerly course; the winds from the east and north-east carried me as far as the latitude $20^{\circ} 10'$. We had afterwards, for eight days, a dead calm, during that time we were entirely at the mercy of the currents which drifted us to the north-west.

On the 3d of July, in latitude $24^{\circ} 26'$, the winds between the west and the north began to blow sometimes with considerable force, sometimes more faintly; they carried me on the 7th to the latitude of $25^{\circ} 9'$, and I supposed myself to be then off the great Volcano Island. We continued our course till the 11th, when being in latitude $27^{\circ} 52'$, I reckoned I might be twenty-five leagues to the east of Mal-Abrigo Island, and that I had gotten clear of all the string of Mariannes. The wind then veered to the third quarter (between the south and the west) and I stood to the north-east, trying always to get into a higher latitude, in order, at last, to have a fair and brisk wind from the west: having reached the latitude of forty degrees, I steered to the east-by-north, as much as the winds would allow: but being in latitude 43, and longitude $179^{\circ} 28'$ east of Paris,

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the wind shifted to the 2d quarter (between the east and the south) and became so violent, that I was obliged for two days to lie to.

The 5th of August the wind came to the north-west; I steered to the east-by-south until the 13th. In this interval the winds blew from all points of the compass, and fixed at last in the second and first quarter. I availed myself as much as possible of its variations to get forward to the eastward.

The 30th I was in latitude $37^{\circ} 5'$ north, and I reckoned myself in $144^{\circ} 17'$ longitude west from Paris, and at 260 leagues distance from Cape Mendocino. The winds fixed then in the fourth quarter; I stood to the eastward until the 3d of September, when we saw sea-weed, and trunks of fir trees floating upon the water, the first sign of the proximity of the northern coasts of California. To approach them I steered to the east-south-east.

On the 4th the sea changed colour: and the sight of some small birds confirmed to us, that we were not far from land, and that in a short time we should get sight of it.

On the 8th, I was off Point Pedernal (or Gun Flints), at the distance of five leagues. These bearings placed me in longitude $123^{\circ} 3'$ west of Paris, I reckoned myself in $130^{\circ} 34'$,
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my reckoning was therefore wrong by 122 leagues, which I made myself too much to the west.

After getting sight of this point, I made for Cape San-Lucar. In my course to the east of the Island of Guadelupa, at the distance of eight leagues, I had some days of calm weather, after which I got sight of Morne Saint Lazare, and the 22d I was near Cape San-Lucar.

On the 25th, after some calms, during which I had a sight of the land of this cape, there came on a terrible hurricane, which in the space of six hours flew round from the north and east, to the south, with such fury that, notwithstanding the heavy sea that headed us, we ran seven miles and a half an hour under the fore sail. There is no doubt but we should have been dismasted, if the tempest had lasted a little while longer.

The same day, when the hurricane had subsided, I set every sail and stood for the Maria Islands. I doubled them on the 26th and 27th, at night, and anchored in the road of San-Blas, in latitude $21^{\circ} 30'$, longitude $134^{\circ} 54'$ east of Manilla, and $107^{\circ} 6'$ west of Paris. I have had the happiness to bring my crew home safe and sound, in spite of the horrible havock the cockroaches had made in our provision, and the wretchedness which was the consequence of it; having lost but two men, one of whom died in the harbour of Sifiran before our departure,

departure, and the other was attacked with a phthisis when he embarked*.

San-Blas, the 27th of September, 1781,

On board the frigate the *Princesse*.

F. A. MAURELLE.

EXTRACT

From the narrative of a voyage made in 1779, by Don Francisco-Antonio Maurelle, ensign of a frigate, in the service of the King of Spain, for discovering the west coast of North America.

Within a few years the Spaniards have undertaken three voyages for examining the west coasts of North America. In the first, Don Juan Perez, chief pilot, ascended as high as 55 deg. of latitude; and, upon his return, he twice reconnoitred the coast between this point and the port of Monterey.

* I have not been disposed to add any remark to the narrative of this voyage, which is intitled *interesting* by Maurelle: but as in hydrography some service is derived from the most inexact journals, notwithstanding the too severe judgment against this by La Pérouse in the extract of his correspondence, in the last volume, I have thought it might become useful to some navigators, or throw light upon some geographical discussions. (*Fr. Ed.*)

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The second voyage is of the date of 1775, and for this purpose a frigate and a schooner were fitted out. The schooner was commanded by Don Juan Francisco de la Bodega y Quadra, a lieutenant in the navy. Don Maurelle, who accompanied Don de la Bodega, and who was then but second pilot, sketched a relation of this expedition. A copy of it fell into the hands of the English, and the Hon. Daines Barrington has published it, translated into English; captain Cook mentions it in the account of his third voyage; but captain Dixon, in the introduction to the narrative of the voyage he made in these seas, accuses Don Maurelle of manifest falsehood; it is incontestible, according to him, that this officer has never been in those tracks where he is said to boast of having made what captain Dixon calls *fruitless researches*. The accusation is strong; if it be well founded, Don Maurelle certainly merits no confidence. He says, "We now attempted to find out the strait of Admiral Fuentes, though as yet we had not discovered the archipelago of St. Lazarus, through which he is said to have sailed. With this intent, we searched every bay and recess on the coast, and sailed round every headland, lying to in the night, that we might not lose sight of this entrance. After these pains taken, and being favoured by a north-west wind, it may be pronounced that no such straits are to

“ be found *.” Captain Dixon next proceeds to say, speaking of Queen Charlotte’s Islands, “ The situation of these islands, viz. from 54 degrees 20 min. to 51 deg. 56 min. north latitude, and from 130 to 133 deg. 30 min. west longitude, evidently shews that they are the archipelago of St. Lazarus.” But is it fully proved, that what captain Dixon calls *Queen Charlotte’s Islands*, is really a group of many islands? We are told, that “ there is every reason to believe it, by considering the great number of small straits which have been seen in ranging along the coast.” But these small straits may be nothing else than creeks; no one of them has been penetrated into. Captain Dixon had other affairs to attend to; his object was not to make discoveries, but to purchase fine furs cheap, and to sell them dear at China. Besides, he is not the author of the narrative; it is, says the introduction, by a person as little practised in the literary career, as accustomed to a maritime life. But captain Dixon tells us, in the same introduction, that he has carefully corrected whatever relates to navigation. All, without doubt, is very well corrected; but to support the erroneous opinion, which people appear to be in, of the reality of the discoveries of Admiral Fuentes, it is not necessary

* “ See Barrington’s Miscellanies, page 508.”

to tax with imposture a navigator, who had no other view than to make new discoveries.

The discoveries made by Maurelle in the second expedition extended to the 58th degree of latitude. Don Maurelle particularised them upon a chart, which probably has not fallen into the hands of the English: the Spaniards will publish it perhaps, and then the discoveries of Maurelle may be combined with those of Cook and Dixon. Don de la Bodega and Maurelle discovered, among the rest, in lat. $55^{\circ} 18'$, the entrance into a harbour which they supposed to be a very good one: they gave to this entrance or opening the name of *Passaggio de Bucarelli*, in honour of friar Don Antonio-Maria Bucarelli y Ursua, viceroy of Mexico, who spared nothing which depended on him to facilitate the success of these expeditions. They discovered two very good harbours also, that of Guadelupa, in $57^{\circ} 11'$, and that of Los Remedios, in $57^{\circ} 18'$. Cook, in his third voyage, in 1778, had a view of these harbours, but he did not put into them.

The King of Spain gave orders for a third expedition, in 1777; it was intended to complete the examination of the north-west coast of America, from the 58th degree to the 70th. Don Bucarelli fitted out two frigates. Don Ignacio Arteaga, a lieutenant in the navy, commanded the *Princesa*; *La Favorita* was under the orders of

Don de la Bodega, who took Don Maurelle for second captain, then *enseigne de frégate*. They agreed to rendezvous first at the entrance of Bucarelli, where they were to take in wood and water, &c.

On the 11th of February, 1779, they left the harbour of San Blas, which they place in lat. $21^{\circ} 30'$ north, and long. $107^{\circ} 6'$ west of Paris. They arrived, the 3d of May, at the entrance of Bucarelli, the geographic situation of which, according to them, is in $55^{\circ} 18'$ north, and $139^{\circ} 15'$ west of Paris. There does not appear to be a ground for questioning the exactness of the latitude of Don Maurelle; so much cannot be said of his longitudes, which probably were not determined by observation, but by account. According to a survey made by captain Cook the preceding year, on the coasts adjacent to the entrance of Bucarelli, this entrance ought to be very nearly 227° to the east of Greenwich, or 135° one-third to the west of Paris.

Bucarelli's entrance introduced the Spaniards into a vast gulf; they anchored there the third of May, in a harbour, than which, they say, there is not a finer in Europe; they gave it the name of *Puerta de la Cruz*.

On the 18th of May Don Maurelle was dispatched with two long boats to make the tour of the gulf.

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In this expedition, which he did not finish till the 12th of June, he surveyed all the capes, all the islands, all the principal parts of the great gulf; he delineated all the creeks, all the bays, and all the particular harbours.

Every one of these bays, every one of these harbours, says he, are good and safe. He gave names to all these places; and afterwards laid down an extensive and very exact plan of the whole of the great gulf: it is much to be wished this plan was published, as well as the chart Don Maurelle constructed of the coasts and the islands that the Spaniards discovered in the course of their expedition. The chart, however, would be less essential than the plan, the same coasts having been visited by Cook the preceding year; but some particulars might be found in it which may have escaped the English argonaut.

Don Maurelle met with very few habitations in his expedition; he saw but one village, situate at the top of a high hill; it was not to be ascended but by a flight of steps, or rather by a wooden ladder; if the foot slipped you fell down the precipice.

The Spaniards were not a long time in the harbour of La Cruz without receiving a visit from the Indians in its neighbourhood. Bartering took place; the Indians gave their peltry, and

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various trifles, for glass beads, bits of old iron, &c. By this traffic the Spaniards were enabled to gain a sufficiently exact knowledge of their genius, of their offensive and defensive arms, of their manufactures, &c.

Their colour is a clear olive; many among them have, however, a perfectly white skin: their countenance is well proportioned in all its parts. They are robust, courageous, arrogant, and warlike.

They clothe themselves in one or two undressed skins (with the fur apparently); these are the skins of otters, of sea wolves, of benades (a species of deer), of bears, or other animals, which they take in hunting. These dresses cover them from the neck to the middle of the leg; there are, however, many among them who wear boots of smooth skin, resembling English boots, only that those of the Indians open before, and are laced tight with a string. They wear hats woven from the fine bark of trees, the form of which resembles that of a funnel, or a cone. At the wrists they have bracelets of copper or iron, or for want of these metals, the fins of whales; and round the neck, necklaces of small fragments of bones of fishes, and other animals, and even copper collars of the bigness of two fingers. They wear in their ears pendants of mother of pearl, or flat pieces of copper, on which is embossed a resin of a topaz colour,

colour, and which are accompanied with jet beads. Their head of hair is long and thick, and they make use of a comb, very like ours, to hold it together in a small queue from the middle to the extremity; a narrow ribbon of coarse linen, woven for this purpose, serves as a ligament.

They wear also, as a covering, a species of scarfs* a vare and half long† and one vare broad, woven as the peillons‡ of Peru; all around it hangs a fringe half a quarter of a vare broad, the thread of which is regularly twisted.

The women give proofs of their modesty and decency by their dress. Their physiognomy is agreeable, their colour fresh, their cheeks vermillioned, and their hair long; they plait it together in one long tress. They wear a long robe of a smooth skin tied round the loins, like that of a nun; it covers them from the neck as low as the feet; the sleeves reach down to the wrists. Upon

* It is in the Spanish, *algunas presadas*. I know not whether *presadas* signify any other thing than green colour, perhaps *presadas* has been written for *frazadas*, a covering; the *p* for the *f*, and the *s* for the *z* are often met with in the manuscript.

† The Spanish vare is about three French feet long.

‡ The Spanish peillon is a species of ancient robe, which is still in use at Peru; the editor has not been able to discover how it is woven.

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this robe they put divers skins of otters or other animals to defend themselves from the inclemency of the weather. Better dressed, many of them might dispute charms with the most handsome Spanish women; but dissatisfied with their natural charms, they have recourse to art, not to embellish, but to disfigure themselves. All the married women have a large opening in the under lip, and this opening or orifice is filled up by a piece of wood cut in an oval shape, of which the smallest diameter is almost an inch; the more a woman is advanced in years the more this curious ornament is extended: it renders them frightful, the old women especially, whose lip, deprived of its wonted spring, and dragged by the weight of this extraordinary jewel, necessarily hangs in a very disagreeable manner. The girls wear only a copper needle, which crosses the lip in the place where the ornament is intended hereafter to be placed.

These Indians in war make use of cuirasses and shoulder pieces of a manufacture like that of the whalebone stays among the Europeans. Narrow boards or scantlings form, in some sort, the woof of the texture, and threads are the warp: in this manner the whole is very flexible, and leaves a free use to the arms for the handling of weapons. They wear round the neck a coarse and large gorget which covers them as high as below the eyes,

eyes, and their head is defended by a morion, or skull-piece, usually made of the head of some ferocious animal. From the waist downwards, they wear a kind of apron, of the same contexture as their cuirass. Lastly, a fine skin* hangs from their shoulders down to the knee. With this armour, they are invulnerable to the arrows of their enemies; but thus armed, they cannot change position with so much agility as if they were less burdened.

Their offensive arms are arrows; bows of which the strings are woven like the large cords of our best musical instruments; lances four vares in length, tongued with iron; knives of the same metal, longer than European bayonets, a weapon however not very common among them; little axes of flint, or of a green stone, so hard that they cleave the most compact wood without injury to their edge.

The pronunciation of their language is extremely difficult; they speak from the throat, with a movement of the tongue against the palate. The little use the women make of the inferior lip greatly injures the distinctiveness of their language. The Spaniards could neither pronounce nor write the words which they heard.

From the vivacity of spirit in these Indians,

* It is in the manuscript *quera*: this word I do not think to be Spanish; I have supposed it ought to be read *cuera*, the name of a species of clothing made of skin.

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and from their attention amply to furnish the market established in the harbour, it may be concluded, that they are pretty laborious. They continually brought stuffs well woven and shaded by various colours, the skins of land and sea wolves, of otters, bears, and other smaller animals; of these some were raw, and others dressed. There were to be found at this market also coverlets* of coarse cloth, shaded with white and brown colours, very well woven, but in small quantities; large ribbons of the same linen which might match with that of the Spanish officers mattraffes; skeins of thread such as this cloth was made of, wooden plates or bowls neatly worked; small boats, or canoes, painted in various colours, the figures of which represented heads with all their parts; frogs in wood, nicely imitated, which opened like tobacco boxes, and which they employed to keep their trinkets in: boxes made of small planks, of a cubical form, being three quarters of a vare on each side, with figures well drawn, or carved on the outside, representing various animals; the covers fabricated like Flanders etwees, with rabbeted edges, formed so as to shut into the body of the box; animals in wood, as well those of the earth as of the air; figures of men of the same material, with scull-caps representing the heads of

* The word *presadas* occurs again: I have presumed, that it must be read *frazadas*, bed coverlets.

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various fierce animals ; snares and nets for fishing ; copper collars for the neck, and bracelets of iron for the wrist, but which they would not part with except at a very high price ; beak-like instruments from which they drew sounds as from a German flute. The principal officers took such of these merchandizes as were most agreeable to them, and left the remainder to the ships crews.

As the Indians discovered, that the Spaniards were very dainty in their fish, they did not let them want for choice : the greatest abundance was in salmon, and a species of sole or turbot three vares and a quarter long, broad and thick in proportion ; cod and pilchards were also brought to market, and fishes resembling trout. From all this it may be inferred, that this gulf is full of fish ; the banks too are covered with shells.

The quantity of mother-of-pearl that these Indians cut to pieces for making ear-rings awakened the curiosity of the Spaniards : they tried to discover whether these people had not in their possession, or whether their country did not produce pearls, or some precious stones : their researches were fruitless, they only found some stones which they judged to be metallic, and which they carried on board, not having the necessary means for extracting the metal they might contain.

These Indians fed upon fish, fresh or dry, boiled or roasted ; herbs and roots which their mountains

tains yielded them, and particularly that which in Spain is called sea parsley; and lastly upon the flesh of animals, which they take in hunting: the productions of the chase are undoubtedly abundant, seeing the number of dogs they keep for this purpose.

The Spaniards did not perceive among them any vestige of religion, unless it be observed, that they incline sometimes towards the sun; but is this done as an act of devotion? The answer is not easily made to this question.

Don Maurelle in his expedition round the gulf found in two islands three dead bodies laid in boxes of a similar form to those which have been described above, and decked in their furs. These biers were placed in a little hut upon a platform, or raised floor, made of the branches of trees.

The country is very hilly, the mountains are lofty, and their slope extends almost every where to the sea. The soil, lime-stone; it is nevertheless covered with an impenetrable forest of tall fir trees, very large and very strait. As these trees cannot strike very deep into the earth, the violence of the wind often tears them up by the roots: they rot and become a light mould, upon which grows a bushy thicket, and in this are found nettles, camomile, wild celery, anise, a species of cabbage, celandine, elder, wormwood, sorrel; and without doubt there are other plants along the rivers.

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The Spaniards saw ducks, gulls, divers, kites, ravens, geese, storks, gold-finches, and other little birds unknown to them.

The commerce between the Spaniards and the Indians was quite undisturbed: the former kept themselves always on their guard, ready for self-defence if attacked; the latter contented themselves with stealing all they could secretly, if not observed, but openly, if they believed themselves the strongest. In the desire to preserve peace and quietness, the Spaniards shut their eyes upon petty thefts: but if any were committed on them too prejudicial to be tolerated, they seized either some canoe, or some personage of distinction, which they did not release till restitution was made; but all this was attended with no effusion of blood.

The desire to obtain iron, cloth, and other stuffs, was stronger among the Indians than paternal love; they sold their children for some wares of stuff, or for some broken pieces of iron hoops. The Spaniards in this manner bought three young lads, one from five to six years old, another of four, and the third from nine to ten, not to make slaves, but christians of them; they hoped besides to derive useful information from them as to the nature of the country and its inhabitants. These youths were so contented in being with the Spaniards, that they hid themselves, when their parents came

came on board, from the apprehension of being again restored to them. Two young girls were also purchased with the same view; one very ugly, seven years of age; the other younger, better made, but sickly, and almost at the gates of death.

The oldest of the boys appeared of a lively disposition, and of a more than ordinary understanding; he presently made himself beloved by all the crew. He signified through very expressive signs, what his countrymen meditated, what they were going to do, and what was the end proposed: he took the soldiers by the hand, conducted them to the deposits of arms, put muskets into their hands, made signs to load them, and to fire upon this or that canoe, but to spare such a one as belonged to friends or favorites. The environs therefore of this harbour are inhabited by various tribes, enemies to each other.

At the full and change of the moon, the sea rises in the harbour of La Cruz seventeen feet three inches English; it is then high water at a quarter after 12 at noon: the lowest tides are fourteen feet three inches; the night tides exceed by one foot nine inches those of the day.

The winds from the south, south-east, and south-west, being always accompanied by fogs or mists, and with continual rains, the Spaniards on the 15th of June quitted the harbour of La Cruz,

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Cruz, and repaired to that of San-Antonio, with the view of more easily getting out of the gulf with the first north-west wind; this they were not able to do till the first of July.

The 16th of July, they discovered, half a league to leeward, a shoal which they reckoned to be in latitude $59^{\circ} 2'$ and longitude $147^{\circ} 46'$ *: they saw Mount Saint Elias at a great distance, the summit of which they say may equal that of Orisaba in height.

The 17th, at noon, Cape Saint Elias bore west 40 deg. north, distant three leagues: they estimated its latitude at $59^{\circ} 53'$, its longitude $149^{\circ} 20'$. The charts represent an island in the vicinity of this cape: the point of this island nearest to the cape bore north 18 degrees west, distant five leagues. From this cape the coast runs away to the north, inclining a little towards the north-west: they distinguished in this part several large bays, where they think there may be well sheltered harbours.

The island, says Don Maurelle, is larger than it is represented upon the charts: the Spaniards being only half a league from it, discovered a shoal to the south-west.

* All the latitudes are to the north, the longitudes to the west of London. It has already been remarked, that these longitudes could not be depended upon.

The 18th, they got sight of a vast gulf, to the west of Cape Saint Elias; this gulf is ten leagues in depth. The 20th, they were boarded by two canoes of a singular construction; very thin boards or planks form the wood work; their planks are attached to each other by moderately strong cords, and yet leave void spaces between them; so that without the lining, this would form an exact skeleton of a canoe. This skeleton is surrounded every where with the skins of animals, leaving in the upper part only a round opening; the borders of these skins serving as a girdle, are fastened round the body of him who manages the canoe; and that the water may not enter it by this opening, the conductor puts on a skirt made of bladders, sewed very exactly and closely together, and conveniently tied upon the borders of the opening. We may conceive these boats to be extremely light: their form is exactly that of a harp; their prow has the same curve as the bridge whereon the strings of the harp are fastened. The Indians, who navigated these canoes, were clothed in skin jackets, which sufficiently defended them from cold; their hats resembled those of the inhabitants of Port Bucarelli; large glass beads hung from their ears. Their fishing instruments are darts worked to extreme niceness as if a lathe, a large pole, a blown

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up bladder, a harpoon the point of which is bone, and a long cord made of the entrails of animals, and conveniently twisted. They dart the harpoon at the otter, or sea wolf: the animal thus struck endeavours to dive, but the bladder will not allow him; and the Indian presently draws him within his reach. The young Indians taken on board at Bucarelli were desirous of communicating with these: they did not, however, understand one another.

These two canoes engaged the Spaniards to put in at the neighbouring coast: they anchored there the 20th of July, at midnight; but early the next day they gained a creek then bearing north of them, at a league distance. They were sheltered from the north-west, the north, and so on to the south: a little further in, they would have been secure from every wind. This harbour, to which they gave the name of *Puerta San Jago*, lies in latitude $60^{\circ} 13'$, and longitude $157^{\circ} 52'$.

To satisfy themselves whether they were near an island or a continent, they sent off the long boat, which, after having sailed six or seven leagues to the north-north-west, reported, that the coast then trended towards the east; whence they concluded, that the land near which they anchored was an island*.

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* On a serious examination, this harbour I think is near Cape Hinchinbroke. Cook made no observation upon

Six canoes of Indians, each canoe twenty-six cubits long, and four broad, lined with white skins, otherwise of a construction nearly resembling that of European boats, paid a visit to the Spaniards. Before they drew very near they hoisted three flags, the first of a carnation colour, the second white, and the third blue; but they struck them before they came up alongside the ship. They were accompanied by two women, whose sex is distinguished by glass beads or other baubles hanging from both sides of the mouth. In other respects they are habited nearly in the same manner as the women of Port Bucarelli.

The commandant had been once a fishing in the long boat, he filled it in a short time with a fish agreeable in flavour, which they called *pargo mulato*: but the fish which abounds the most in these seas, is the salmon; the *pargo mulato* is only plentiful at the bottom of the small creeks upon the shore.

The Indians, who inhabit this country, are robust, tall in stature, and large in proportion;

the environs of this cape, any more than captain Dixon. The long boat might have penetrated into the bay, which is called *Rose Bay*, upon Dixon's chart; and seeing it entirely shut up to the east, it might have continued its course towards the coast, stretching along to the north-north-west. I think further, that the transcriber may have written $157^{\circ} 52'$ for the longitude, instead of $153^{\circ} 52'$: the manuscript abounds in faults.

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they are industrious, and disposed to thieving. The copper points, with which all their arrows are tipped, inclined the Spaniards to think they had mines of this metal in their country.

The 28th of July, our navigators weighed anchor, to sail round a point which they saw to the south-west, 5 degrees south, at the distance of 11 leagues, (probably the south point of Montagu Island). They were desirous of keeping the land in sight, but the rain, and the fogs, would not always let them.

The 30th they lay to until the next day, when they discovered themselves to be near a cluster of islands which extended from the south-south-west to the south-south-east: they anchored the 1st of August to the south of one of these islands, which they named *Isla de Regla*; they place it in $155^{\circ} 52'$ of longitude, by account, and $59^{\circ} 8'$ of latitude, by observation*. Don Maurelle believes, that these islands form that which, upon

* Upon the chart of Prince William's Sound (third volume of Cook's third voyage) there is a place where we may suppose the group of islands of which the *Isla de Regla* makes a part; it is to the south-west of Montagu Island, about lat. $59^{\circ} 8'$ and $210^{\circ} 30'$ to $40'$ longitude east from Greenwich, or $151^{\circ} 40'$ to $50'$ to the west of Paris. Cook passed about 15 leagues to the westward of these islands; Dixon as much to the eastward of them: these islands may be too low to be seen at this distance; they may also be more to the westward than is imagined.

Bellin's chart, engraved in 1766, is called *Cape de Saint Ermogène*: the latitude is the same. The Russians, observing this group a great way off, did not discern the intermediate channels which divide it into many islands, but took it for a point of firm land. Towards the south of the *Isla de Regla* are many other islands.

The 3d of August, the sky being clear, there was seen to the north-west 7 degrees north, at the distance of more than twenty leagues, a mountain certainly higher than the Peak of Teneriffe, quite covered with snow. In the evening, by twilight, it was observed to vomit torrents of thick smoke: the crater from which this smoke issued was a little more to the east than the summit of the mountain, it was judged to be a volcano. Near this mountain another presented itself to view, very high also, upon which no remains of snow were seen; this bore west-north-west 8 degrees west, distant fifteen leagues. Afterwards two others were seen, the largest of which was set to the west-south-west 4 degrees south, at the distance of thirteen leagues: these two, although high, were much less so than the preceding, and yet they were totally covered with snow.

On the *Isla de Regla* were found many small cabins or huts, sea wolves, nearly flayed, a great number of birds heads, but not one inhabitant.

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After a stay of two or three days, a canoe appeared off one of the neighbouring points; the Indians uttered some words, but they would not come alongside the frigates.

The expedition of the Spaniards terminated at this island. They quitted it on the 7th of August, and came to anchor at San Blas, the 27th of November. From Cape Saint-Elias to the Isla de Regla, they took, with the most scrupulous exactness, the bearings of all the islands, capes, and bays, which they saw; but the winds and the currents, very frequent and very violent in these seas, drove them off the coasts oftener than they desired, and prejudiced the accuracy of their reckoning. Nevertheless, if they publish the chart they have constructed according to their bearings, their observations, joined to those of captain Cook, of La Pérouse, and captain Dixon, will contribute not a little to improve the geography of this part of the coast of North America.

End of the Preliminary Part.

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LA PÉROUSE'S VOYAGE

ROUND THE WORLD

DURING THE YEARS

1785, 1786, 1787 AND 1788.

CHAPTER I.

Object of the armament of the two frigates—Stay in the road of Brest—Passage from Brest to Madeira and Teneriffe—Stay at those two islands—A journey to the Peak—Arrival at Trinidad—We put in at the Island of St. Catherine upon the coast of Brasil.

THE ancient spirit of discovery appeared to be entirely extinct. The voyage made by Ellis, in 1747, to Hudson's Bay, did not answer the expectations of those who advanced money for the adventure. On the 1st of January, 1739, captain Bouvet imagined that he saw land in 54° south; but it now appears probable that it was only a field of ice; and by this mistake the progress of geography was materially impeded. The system-makers, who sit down in their closets, and there draw the figures of lands and islands,

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concluded that the supposed Cape of Circumcision was the northern point of a southern continent, the existence of which seemed to them demonstrable as necessary to the equilibrium of the globe *.

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* The partizans of the existence of a Southern Continent will, no doubt, consider the assertion of De La Pérouse as hazarded. Nevertheless, without pretending that Cape Circumcision, discovered by Bouvet, rather belongs to an immense field of ice *, than to an island; without resolving the idle problem of the existence of a Southern Continent, which can only be situated in a latitude that must keep it for ever insulated from the rest of the globe, I will venture to say that Cook's first voyages towards the South Pole have sufficiently decided the question: and that Le Monnier's dissertation to prove that Cook did not seek Cape Circumcision in its true longitude has lost all its importance †. While making my profession of faith in that respect—while confessing that I believe in the existence of a Southern Continent, I do not think at the same time that it is necessary to the equilibrium of the globe. Of what consequence, indeed, could be the weight of so small a *protuberance* to so enormous a mass as the globe, in which the smallest difference of internal homogeneity would be a sufficient compensation for superficial solidity.

Although captain Cook hopes that *he shall hear no more of a Southern Continent* ‡, it will, perhaps, be adviseable, some cen-

* Captain Cook having gone very far to the southward of the land discovered by Bouvet, it is clearly impossible that Cape Circumcision can belong to a Southern Continent.

† See the *Memoires de L'Academie Des Sciences de Paris*, of the year 1776, page 665; of the year 1779, page 12. See also Cook's *second and third voyages*.

‡ Cook's *Third Voyage*, vol. III.

These two voyages are well-calculated to discourage individuals, who, out of mere curiosity, sacrifice considerable sums in an undertaking, which has long ceased to engage the attention of the different maritime powers of Europe.

In 1764, England fitted out a new expedition, the command of which was given to commodore Byron. The account of this voyage, like those of Wallis, Carteret, and Cook, is well known.

In the month of November 1766, M. de Bougainville sailed from Nantz with the *Boudeuse* frigate, and *E'toile Flute*. He followed nearly the same track as the English navigators, and discovered several islands. The account of his voyage composed in an interesting manner, contributed not a little to give the French that taste for discoveries which had lately been revived in England with so much energy.

centuries hence, to ascertain the progress that the ice may make towards the Equator, and thus to bring Buffon's ingenious system of the gradual refrigeration of the globe to the proof. But it will require a good many ages to obtain a probable result; for, in different years, and at the same time of the year, navigators have met with ice in higher or lower latitudes. It is said, that the whale-fishers, who go annually to Spitzbergen, once advanced within a degree of the pole. It also appears that Lorenzo Ferrer de Maldonado, of whom I shall speak elsewhere, sailed through a north passage, which our most intrepid navigators have never been able to find, having been constantly repelled by the ice.

In

In 1771, M. de Kerguelen was sent upon a voyage towards the Southern Continent, the existence of which at that time no geographer ventured to dispute. In the month of December of the same year, he got sight of an island, but was prevented from exploring it completely by the badness of the weather. Full of the ideas of all the learned men in Europe, he made no doubt of his having perceived one of the capes of the Southern Continent; and so eager was he to bring home the news, that he did not delay his return a single moment. He was received in France like another Columbus; and immediately after a ship of the line and a frigate were equipped to continue so important a discovery. This extraordinary choice of vessels would alone suffice to shew that enthusiasm supersedes all reason and reflection. M. de Kerguelen received orders to go and make a survey of the supposed continent he had discovered. The bad success of his second voyage is well known; but even captain Cook, the most skilful of navigators, would not have succeeded in such an enterprize with a ship of 64 guns, a frigate of 32, and a crew of seven hundred men; perhaps, indeed, he would not have accepted such a command, or would have procured the adoption of other ideas. However this may be, M. de Kerguelen returned to France with no better information than before; and all idea of farther

farther discoveries was laid aside. The King died in the course of this last expedition. The war of 1778, directed the views of the nation to far different objects; but we did not forget that our enemies had the Resolution and Discovery at sea, and that captain Cook, by labouring for the extension of human knowledge, had a claim to the friendship of every country in the universe*.

The principal end of the war of 1778 was to secure the tranquillity of the seas; and that end was attained by the peace of 1783. The same spirit that made us take up arms in order that the flags of the nations, the least powerful at sea, should be respected as much as those of France and England, necessarily directed itself during the peace to whatever might tend to the general benefit of mankind. The sciences, by softening the

* Every thing concurs here to make me record a fact equally glorious to the French, and to him, who in the midst of a war politically necessary, became the object of it.

At the commencement of hostilities against England, in 1778, an order was given to all French ships that might fall in with the Resolution and Discovery, commanded by captain Cook, to let them pass freely without examining them; and, far from treating them as enemies, to furnish them with all assistance of which they might stand in need.

It is thus that a great nation shews a religious respect for the progress of the sciences, and of useful discoveries. (*Fr. Ed.*).

manners

manners of men, have, perhaps, contributed even more than good laws to the happiness of society.

The voyages of different English navigators, while extending human knowledge, deserved the just admiration of the whole world. All Europe accordingly set the highest value upon captain Cook's talents, and upon the firm temper of his mind. But in so vast a field there will be room to acquire fresh knowledge for centuries to come—coasts to survey; plants, trees, fish, and birds to describe; minerals and volcanoes to observe; nations to study, and perhaps to render more happy, since a farinaceous plant, or a new species of fruit, must be inestimable benefits to the inhabitants of the islands in the South Sea*.

These

* Can the benefit derived from a new farinaceous plant, or a new fruit, or even the introduction of domestic animals, be compared to the sum of evil which those people will find to result from the adoption of European customs and manners?

After examining this problem in a philosophical, political, and even a religious point of view; after enquiring what they possess, with the conviction we must naturally feel that their desire of more can only be produced by knowledge they at present have not; we shall conclude, I think, by ardently wishing that they may long enjoy their happiness, and that unalterable tranquillity which is founded upon content of mind, an unrestrained enjoyment of the sentiments of the heart, and the observance of laws derived from nature herself.

The

These different reflections suggested the project of a voyage round the world; and scientific men of all descriptions were enrolled in the expedition.

The following passages, extracted from *Cook's third voyage*, give powerful support to my opinion.

"When the Adventure arrived first at Queen Charlotte's Sound, in 1773. Mr. Bayley fixed upon this place for making his observations; and he and the people with him, at their leisure hours, planted several spots with English garden seeds. Not the least vestige of these now remained. Though the New Zealanders are fond of potatoes, it was evident that they had not taken the trouble to plant a single one (much less any other of the articles which we had introduced) and if it were not for the difficulty of clearing the ground where potatoes had been once planted, there would not have been any now remaining, &c." vol. I, page 125.

"These two chiefs became suitors to me for some hogs and goats. Accordingly I gave to Matahonah two goats, a male, and a female with kid; and to Tomatongeauroanue two pigs, a boar, and a sow. They made me a promise not to kill them; though I must own I put no great faith in this. The animals which captain Furneaux sent on shore here, and which soon after fell into the hands of the natives, I was now told were all dead, &c." vol. I, page 131.

"He (Faweikaroon) said that the captain of her, during his stay here, cohabited with a woman of the country, and that she had a son by him, still living, and about the age of Kokoa; who, though not born then, seemed to be equally well acquainted with the story. We were also informed by Taweikaroon that this ship first introduced the venereal disease amongst the New Zealanders. I wish that subsequent visitors from Europe may not have their share of guilt in leaving so dreadful a remembrance of them among this unhappy race, &c. &c." vol. I, page 141. (*Fr. Ed.*)

M. Dagelet,

M. Dagelet, of the academy of sciences, and M. Monge*, embarked in quality of astronomers, the former on board the *Bouffole*, and the latter on board the *Astrolabe*. M. de Lamanon, a member of the academy of Turin, and a correspondent of the academy of sciences, was charged with the department of the natural history of the earth and it's atmosphere, otherwise called geology. The abbé Mongés, a regular canon of St. Genevieve, and editor of the *Journal de Physique*, undertook to examine and analyze mineral substances, and to contribute to the progress of the different branches of physics. M. de Jussieu recommended M. de la Martiniere, a physician of the college of Montpellier, for the botanical department. He had as an assistant a gardener from the King's garden, whose special duty it was to cultivate and preserve the plants and seeds that it might be possible to bring to Europe. This was M. Collignon, who embarked upon the recommendation of M. Thouin. Messieurs Prevost, uncle, and nephew, were engaged to paint every thing belonging to natural history. M. Dufresne, a great naturalist, particularly skilful in classing all the productions of nature, was sent to us by the controller-general of the finances. And lastly, M. Duché de Vancy

* The health of M. Monge became so bad, in his passage from Brest to Teneriffe, that he was obliged to go on shore, and to return to France.



had been made use of by the celebrated captain
VOL. I. G g Cook.



A CHART
of the
GREAT OCEAN
OR SOUTH SEA
Conformably to the
Account of the Voyage of Discovery
French Frigates
LA BOUSSOLE & L'ASTROLABE
in the Years
1785, 86, 87, and 88.

* Greenwich is 2 Hrs. 25 Min. to the West of Paris.





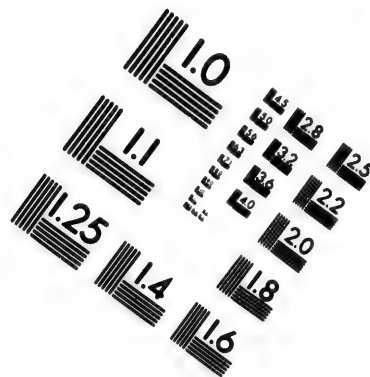
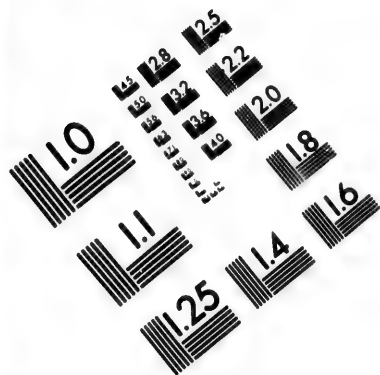
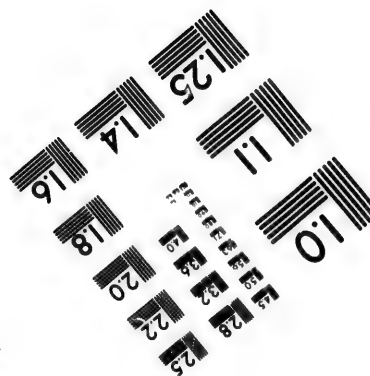
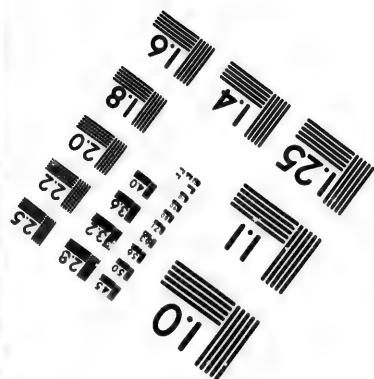
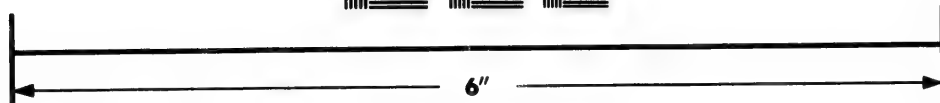
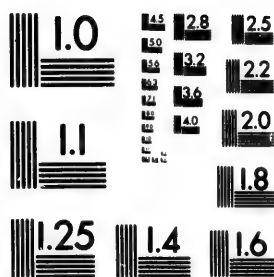


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received orders to embark, in order to paint the dresses and scenery of the different countries we might visit, and every thing else that it is impossible to describe. All the learned bodies in the kingdom were desirous upon this occasion of manifesting their ardent zeal for the progress of the arts and sciences. The academy of sciences, and the medical society, addressed each a memoir to the Maréchal de Castries, concerning the most important observations we should have to make in the course of our voyage.

The abbé Tessier, of the academy of sciences, proposed a method of keeping fresh water sweet. M. Du Fourni, an architect, also communicated to us his observations upon trees, and upon the level of the sea.

M. Le Dru sent us a memoir in which he recommended the making of several observations upon the magnet, in different latitudes and longitudes, and added to it a dipping compass of his own making, begging us to compare it's result with that which should be given by the two instruments of the same kind lent to us by the commissioners of the English board of longitude. Here I cannot help expressing my gratitude to Sir Joseph Banks, who, upon hearing that M. Monneron could procure no dipping compass at London, was good enough to lend us those that had been made use of by the celebrated captain

Cook. I received them with a sentiment of religious respect for the memory of that great man.

M. De Monneron, a captain in the corps of engineers, who had accompanied me in my expedition to Hudson's Bay, embarked in quality of chief engineer. His friendship for me, as well as his fondness for travelling, induced him to solicit the appointment.

In the last place, M. De Fleurieu, an old post captain in the navy, and director of the ports and arsenals, constructed himself the charts that we were to use during the voyage. He added a whole volume of the most learned notes and disquisitions concerning the different navigators from Christopher Columbus to the present time. I owe him a public testimony of my gratitude for the information I have received from him, and for the many proofs of friendship he has given me*.

* The loss of our navigators, an event regretted by all Europe, is particularly injurious to the arts and sciences. The immense collection made by the men of science, and a part of the memoirs, perished with them. The reader must not expect to find, in the atlas, all the details that the journal seems to indicate. This voyage, which in its present state is highly interesting, would, but for its tragical event, have afforded a complete body of information of the most valuable kind. If any hope yet remain, it is very weak indeed, and grows still weaker every day. (*Fr. Ed.*)

The Maréchal De Castries, minister of the marine, who recommended me to his Majesty for the command, sent the most positive orders to the different ports to furnish us with whatever might contribute to the success of the expedition. Lieutenant General D'Hector, commandant of the naval department at Brest, entered into his views, and attended to all the particulars of the out-fit as if the command had been his own. Having been empowered to appoint my own officers, I chose for the command of the *Astrolabe*, M. De Langle, a post captain, who commanded the *Astrée* in my expedition to Hudson's Bay, and who had given on that occasion the greatest proofs of abilities and energy of mind. A hundred officers offering themselves to M. De Langle and me, to serve in the expedition, we were enabled to select from among them as many men of distinguished professional talents as we wanted. At length, on the 26th of June, my instructions were delivered to me; and on the 1st of July I set off for Brest. I arrived there on the 4th, and found the equipment of the two frigates in great forwardness. The shipping of a variety of things had been deferred, because it was necessary to make an option between articles in request among the savages, and provisions of which I wished to have a sufficient quantity for several years. I gave the pre-

ference to the former, considering that with them we should be able to procure fresh stock; and that at the end of a certain time the ships provisions would be almost entirely decayed.

We had on board, besides, the frame of a decked boat*, of about twenty tons burthen, two pinnaces, (*chaloupes biscayennes*) †, and a spare mainmast, tiller, and capstan. The whole quantity of things contained in the *Bouffole*, was really incredible. M. De Clonard, my second captain, had stowed her with that zeal and intelligence of which he has given so many proofs. The *Astrolabe* had taken on board exactly the same articles as ourselves. On the 11th, we were in the road, our vessels being so encumbered that it was impossible to heave at the capstan; but we had a favourable season for our departure, and were in hopes of reaching Madeira without encountering any bad weather. M. D'Hector or-

* Or *boyer*, a very strong kind of vessel, with flat floor timbers, used in Flanders and Holland, and very fit for inland navigation. (*Fr. Ed.*)

† *Barca-longa*, boats uncommonly long, and very sharp at the extremities, well contrived to navigate in the swell of a sea. (*Fr. Ed.*)

Whenever this word has occurred, it has been translated *pinnace*, which is a kind of boat that appears to be more answerable to the above description than any other in use in the British navy, though it is certainly not the same as the *barca-longa*. (*T.*)

dered us to anchor in the road with harbour moorings, that we might have nothing to do but to slip the cables whenever the wind should permit us to fail.

On the 12th, our crews were mustered. On the same day the astronomical clocks intended to ascertain, when in port, the daily rate of our time-keepers, were put on board both ships. The latter had been embarked and under observation for a fortnight before. Messieurs Dagelet, and Monge, and the rest of the scientific men and artists, had reached Brest earlier than I; and even before the arrival of the two astronomers, Messieurs De Langle, and D'Escures, had observed the going of the time-keepers. Unfortunately the astronomical clock with which they had been compared, was found to be so bad that it was necessary to do all the work over again.

On the 13th, in the evening, M. Dagelet delivered to me the following note:

“ On our arrival at Brest we found an astronomical station established in the intendant's garden where Messieurs De Langle, and D'Escures, busied themselves in making observations in order to determine the rate of going of the time-keepers. But, as the instruments of the academy of Brest were in very bad order, particularly the astronomical clocks they had made use of, they perceived, after several days observation, that it was necessary to make the comparisons relative to

the time-keepers by referring them all to No 25*, which was in the observatory. When our instruments were set up on shore, I determined the rate of going of my clock, by altitudes of the sun and stars, comparing every day the time-keepers, No. 18, and No. 19, by means of signals made on board. Thence I formed the following table of their daily rate :''

Days of the Month.	No. 18. Loss upon the mean time of Paris.	No. 19. Loss upon the mean time of Paris
June 28	36' 48", 8.	27' 51", 0.
30	37 07, 1.	27 47, 7.
July 1	37 19, 0.	27 45, 0.
2	37 31, 0.	27 44, 2.
3	37 39, 5.	27 45, 4.
4	37 51, 8.	27 44, 0.
5	38 05, 0.	27 42, 0.
6	0 0.	27 42, 1.
7	38 36, 7.	27 42, 1.
8	38 49, 3.	0 0.
9	39 03, 0.	27 48, 8.
10	39 13, 6.	27 42, 5.
11	39 27, 0.	stopped.
12	0 0.	0 36, 6.
13	0 0.	0 36, 4.

* All the time-keepers embarked on board the two frigates were invented and constructed by Ferdinand Berthoud, who distinguished them by numbers, (*Fr. Ed.*)

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The westerly winds kept us in the road till the 1st of August. The weather in the mean time being foggy with showers of rain, I was afraid that the humidity might affect the health of our crews. In the space of nineteen days however we only landed a single man with a fever; but we discovered that six sailors and a soldier, infected with the venereal disease, had escaped the examination of our surgeons.

I sailed from Brest Road on the 1st of August. Nothing interesting occurred during the run to Madeira, where we anchored on the 13th. The wind had been constantly fair, a circumstance highly necessary to ships which, being too much by the head, steered very ill. M. De Lamenson observed the luminous particles in the sea water, which, in my opinion, proceed from the dissolution of marine bodies. If this light were produced by insects, as many natural philosophers affirm, they would not be spread with such profusion from the pole to the equator, but would affect particular climates*.

Before

* After the result of the experiments presented by Rigaud, in 1768, to the academy of sciences, it is impossible to doubt the existence of *polypi*, or luminous animals in the sea. I do not know upon what La Pérouse can ground an assertion, combated by Godeheu, who observed at the Maldives, and on the Coast of Malabar, places where the sea is more luminous than in the latitudes of which our navi-

Before we were well at an anchor, Mr. Johnston, an English merchant, sent a boat laden with fruit on board of my ship. Several letters of recommendation to that gentleman from London had preceded me, and surprized me much, as I was entirely unacquainted with the persons by whom they were written. The reception given us by Mr. Johnston was so kind, that we could not have expected a better from our relations, or our best friends. After having paid our respects to the governor, we went to dine at his house. The next day we breakfasted at the charming country seat of Mr. Murray, the English consul, and returned to town to dine with M. Montero, *Chargé des Affaires* of the French consulate. During the whole of that day, we enjoyed all

gator is speaking, that the water was covered with little living luminous animals, emitting a kind of oily liquor, which floated on the surface, and diffused, when agitated, a phosphoric light.

I believe then in the existence of these animals, which is maintained by Nollet, Roy, Vianelli, Grifellini, &c. I also think that the phosphoric oil of certain fishes, being carried to the surface of the water, produces in part that light which is perceptible in every sea.

I can adduce in support of my opinion the effect of the oil of the bonetta, which becomes luminous when shaken. Forster's observations on the phosphoric light of sea water, at the end of *Cook's second voyage*, and those of Lalande, in the *Journal des Savans*, 1777, may also be consulted. (*Fr. Ed.*)

the

the pleasure that the most select company, and the kindest attentions can afford, and were at the same time highly delighted with the situation of Mr. Murray's villa. Our eyes could only be drawn off the beauties of the prospect by the consul's three pretty nieces, who came to prove to us that nothing was wanting in that enchanting abode. But for the imperious circumstances in which we were placed, nothing would have been more agreeable to us than to pass a few days at Madeira, where we were welcomed in so obliging a manner; but the object of our putting in there could not be attained. The English having raised the price of wine to an excessive height, we should not have been able to procure any for less than thirteen or fourteen hundred livres per cask, containing four barrels; the same quantity at Teneriffe, costing only six hundred livres. I therefore ordered every thing to be prepared for sailing on the following day, namely, the 16th of August. The sea breeze did not give over blowing till six o'clock in the evening, and immediately after we got under way. I had received another present from Mr. Johnston consisting of rum, preserved citron, a hundred bottles of Malmsey Madeira, a barrel of dry wine, and a prodigious quantity of fruit. From my arrival at Madeira, every moment of my

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my stay was marked by the most polite attentions on his part.

Our run to Teneriffe took only three days. We anchored there on the 19th, at three o'clock in the afternoon. On the 18th, in the morning, I got sight of Salvage Island, and ran down the east side of it, at the distance of about half a league. The coast is safe; and although I had no opportunity of sounding, I am convinced that there is a hundred fathoms water, at a cable's length from the land. This island, on which there is not a single tree, is entirely parched up. It appears formed of different strata of lava, and other volcanic matter. We took several bearings of it, in order to determine its position.

The different observations of Messieurs De Fleurieu, Verdun, and Borda, are perfectly satisfactory as to the islands of Madeira, the Salvages, and Teneriffe. Ours had consequently no other object than that of ascertaining the truth of our instruments, and the rate of going of our time-keepers, which had been determined at Brest by M. Dagelet, sufficiently well for us to depend upon the longitude they might give for several days together. Our making the island of Madeira, afforded us an excellent opportunity of judging of the degree of precision we had a right to expect from them. The longitude that we
observed

observed within sight of land, reduced to that of Funchal Bay, only differed three minutes of a degree from that which had been determined by M. Borda.

The short stay we made at that island did not permit us to set up an observatory. Messieurs Dagelet, D'Escures, and Boutin, took only a few bearings from our anchorage, of which I had no plan laid down, because it is to be found in a variety of printed voyages. On the 18th of August we employed ourselves in taking bearings of the Salvages, of which I think I may venture to fix the west longitude at $18^{\circ} 13'$, and the north latitude at $30^{\circ} 8' 15''$.

As soon as I arrived at Teneriffe, I employed myself in the erection of an observatory on shore. Our instruments were placed in it on the 22d of August, and we determined the rate of going of our astronomical clocks, by corresponding altitudes of the sun and stars, in order to ascertain as speedily as possible the movement of the time-keepers on board the two ships. All these details will be found at the end of the work. The result of our observations shewed that the error of No. 19, was only a loss of $18''$ since July 13, the last day of our observations at Brest; and that our smaller time-keepers, No. 29, and No. 25, had also lost time, the first $1' 0''$, 7, and the second only $28''$. Thus, in the space of forty-three days,

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the greatest error was only a quarter of a degree in longitude. After several days of observation and regular comparisons, we settled the new daily rate of the above time-keepers. M. Dagelet found that No. 19, gained 2", 55, in twenty-four hours, and that Nos. 29, and 25, gained respectively 3", 6, and 0", 8, in the same space of time. It was from these elements that he drew up the table of their apparent movements, regard being had to the corrections which are required by the variations resulting from the effect of the temperature of the air, according to the different degrees of the thermometer, and of the arcs of the balance wheel. M. Dagelet had some doubts concerning the manner of constructing the table of variation for No. 9, upon the few *data* furnished by the experiments made at Paris. He consequently judged that it would be highly advantageous to those who use time-keepers at sea, if a greater number of experiments were made, and if fewer terms were left to be calculated in the interpolations he was obliged to make, in order to obtain those *data*, especially if the arcs of the balance wheel enter into this kind of correction. In that case a table with a double entry would be required, and doubts would remain concerning the manner in which the ordinates of the curve ought to vary. He made experiments with the simple pendulum on the 27th, 28th, and

29th

29th of August, and observed the number of oscillations in a given time, in order to determine the force of the gravitation of bodies in different latitudes. Several observations were made relative to the latitude and longitude at Santa Cruz in Teneriffe, the position of which we think may be fixed at $18^{\circ} 36' 30''$ west longitude, and $28^{\circ} 27' 30''$ north latitude. At length we terminated our labours by experiments on the dipping compass. We found little agreement in the results, and we only insert them to prove how far this kind of instrument is still from the point of perfection necessary to procure it the confidence of observers. We presume, however, that the quantity of iron with which all the soil of the Island of Teneriffe is impregnated, contributed not a little to the enormous differences we remarked. These various results will be found, as I have already said, at the end of the work.

On the morning of the 30th of August, I sailed with a fresh breeze from the north-north-east. We had taken sixty pipes of wine on board of each ship, which obliged us to unstow half our hold in order to come at the empty casks which were destined to contain it. This business occupied us ten days. It is true that the principal delay was occasioned by the tardiness of the merchants who furnished the wine, which came from

Oratuva,

Oratuva, a small town situated on the other side of the island.

I have already given an account of the manner in which our astronomers had employed their time. Our naturalists wishing also to avail themselves of our stay in the road of Santa Cruz, set off for the peak, accompanied by several officers of the two ships. M. De La Martinière botanized on the way, and found several curious plants. M. De La Martinière measured the height of the peak with his barometer which fell upon the summit of the mountain to 18 inches, four lines, and $\frac{1}{16}$. By an observation made at the same instant at Santa Cruz, it was at 28 inches three lines. The thermometer which indicated $24^{\circ}\frac{1}{2}$ at Santa Cruz, was constantly at 9° on the top of the peak. I leave every one to calculate the height for himself. This manner being so little satisfactory, that I prefer the *data* to the results*. M. de Monneron, captain in the corps of Engineers, also made a journey to the peak with the intention of taking levels down to the sea shore. It was the only manner of measuring this mountain that had never been attempted. Local difficulties, unless entirely insurmountable, would not have stopped him,

* Those who wish to make the calculation will find the *data* that are wanting here, in all the works of natural philosophy; but if they wish to operate with any accuracy according

him, because he was very much accustomed to operations of the kind. When upon the spot he found the obstacles much smaller than he had imagined, for in one day he had got through all that was difficult. He was come to a kind of plain, still indeed at a great elevation, but of easy access, and was congratulating himself upon the prospect of soon arriving at the end of his task, when difficulties were started by his guides, which he found it impossible to overcome. Their mules had not drunk for sixty-eight hours, and neither prayers nor money could prevail upon the muleteers to make a longer stay. M. De Monneron was therefore under the necessity of leaving a work incomplete, which he had considered as finished, and which had cost him incredible pains, and rather a considerable sum of money; for he had been obliged to hire seven mules, and eight men to carry his baggage, and assist him in his operations. In order that he might not entirely lose the fruits of his labour, he determined the principal points;

according to this manner of measuring heights, they must not forget to make the necessary corrections relative to the temperature of the air. The difference of the logarithms of the heights of the barometer in lines, gives the height in toises at $16^{\circ} \frac{2}{3}$ of the mercury thermometer which indicates 80° for the heat of boiling water: $\frac{1}{213}$ must be deducted for each degree of cold. Deluc, *Recherches sur les modifications de l'atmosphère*.—Fr. Ed.

and

and a day would now suffice to complete the levels, which would afford a more satisfactory result than any which travellers * as yet have given.

* The result of De Monneron's labours, mentioned here, never reached Europe. There is reason to believe that he had marked the end of his operations in such a way as to enable any other traveller to continue them. I should imagine that he made use of a water level, notwithstanding the inconveniences attending such an instrument in rapid descents. If he had finished his task, he would have decided among all those who, having measured the peak, each in his own way, have assigned to it very different degrees of elevation.

However defective, long, and difficult this mode of measuring heights may be, its inconveniences disappear when it is employed by a man well versed in the art. It is certain that an operation like the one in question, would not require more than a thousand stations. Now supposing an error of three lines to take place at each station, which is almost impossible; and supposing that these three lines of error should not mutually correct one another, but should always be on one side, which is still less possible, the whole difference at the end of the operation would be only three thousand lines, or three toises two feet ten inches. And, after all, this difference, which is grounded upon such an improbable supposition, is nothing in comparison of that which different travellers have found, since Heberden makes the height of the peak

	-	-	-	-	2,409 toises.
Feuillée (<i>Memoires de l'academie des sciences,</i>	}	2,213			
année 1746, page 140)		-	-	-	-
Bouguer	-	-	-	-	2,100
And Verdun, Borde and Pingré	-	-	-	-	1,904

(Fr. Ed.)

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The Marquis De Branciforte, major-general, and governor-general of all the Canary Islands, paid us the greatest attentions during the whole of our stay in the road of Santa Cruz.

We could not get under way till three o'clock in the afternoon of August 30. Our decks were still more lumbered with stores than at our departure from Brest, but every day would diminish them; and we had nothing but wood and water to look for till our arrival at the islands of the South Sea. I presumed that I should be able to procure both those articles at Trinidad, for I was determined not to touch at the Cape de Verd Islands, which at this season of the year are very unwholesome; and the health of our crews was naturally my first consideration. It was to preserve it, that I ordered the between-decks to be fumigated, and the hammocks to be taken down every day from eight o'clock in the morning till sun-set. But in order that every one might have sufficient time to sleep, the crew was put at three watches, so that eight hours of rest followed four of duty. As I had no more men on board than were absolutely necessary, this regulation could only hold good in calm seas; and I was compelled to return to the old custom in stormy latitudes. Our run, as far as the line, was attended by no remarkable circumstance: the trade wind deserted us in 14° of north latitude, and blew constantly from

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the west-south-west till we reached the line. It forced me to follow the coast of Africa, which I ran down at the distance of about sixty leagues.

We crossed the equator on the 29th of September in the 18th degree of west longitude. I could have wished, in compliance with my instructions, to have been able to pass it much more to the westward; but fortunately the wind drove us constantly to the eastward. But for this circumstance, I should have found it impossible to make Trinidad; for at the line we met with a south-east wind, which pursued me as far as $20^{\circ} 25'$ south latitude, so that I constantly steered close to the wind, and was not able to fetch the latitude of Trinidad till I was only about twenty-five leagues to the eastward of it. If I had made Pennedo de San Pedro*, I should have been hard put to it to weather the east point of the Brasils.

I passed, according to my reckoning, over the shoal on which the *Prince* was supposed to have touched in 1747. We saw no signs of land except some of the birds called man-of-war birds, which followed us in considerable numbers from 8° north latitude, till we were three degrees to

* The making of this island was not enjoined by my instructions, but merely indicated, in case it should oblige me to turn little or nothing out of my way.

the southward of the line. Our ships were at the same time surrounded with tunny fish; but we caught very few, because they were so large that they broke all our lines. Every one of those we got on board weighed at least sixty pounds.

Those seamen who are afraid of meeting with calms at this season under the line, are greatly mistaken. We had not a single day without wind, nor had we rain more than once; it was then, indeed, sufficiently abundant to enable us to catch twenty-five barrels full.

The fear of being carried too far east into the gulf of Guinea, is also chimerical. The south-east winds begin to blow at a very early period, and carry you but too rapidly to the westward. Had I been better acquainted with this navigation, I should have stood more away with the south-west winds that constantly prevailed to the north of the line, which I might have crossed in longitude 10° . I might then have run down the parallel of Trinidad with the wind large. A few days after our departure from Teneriffe, we lost that clear sky which is only to be found in the temperate zone. A dull whiteness, a medium between clouds and fog, continually obscured the atmosphere, so that the horizon seldom extended three leagues; but after sun-set, this vapour disappeared, and the night never failed to be fine.

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On the 11th of October we made a great number of observations of the distance from the sun to the moon, in order to determine the longitude, and to ascertain the rate of going of our time-keepers. By a mean term between ten lunar observations taken with circles and sextants, we found our west longitude to be $25^{\circ} 15'$. At three o'clock in the afternoon, that given by the time-keeper, No. 19, was $25^{\circ} 47'$. We made observations of this kind repeatedly.

The 12th, about four o'clock in the afternoon, the mean result gave $26^{\circ} 21'$ for the longitude of the ship; and the time-keeper, No. 19, at the same instant, $26^{\circ} 33'$. By comparing these two results together, it appears that the longitude given by No. 19 was $12'$ farther west than that obtained by lunar observations. It was by means of these operations that we determined the position of the islands of Martin Vas, and of the island of Trinidad. We have also determined the latitudes very accurately, not only by diligently observing the meridian altitude of the sun, but by taking a great number of altitudes near the meridian, and reducing them to the true time of noon found by corresponding altitudes. The greatest errors we can have committed, by operating in this way, does not exceed $20''$.

The 16th of October, at ten o'clock in the morning, we got sight of the islands of Martin

Vas,

Vas, bearing north-west, five leagues distant. According to our reckoning, they should have bore west, but the currents had drifted us 13' to the southward during the night. Unfortunately the wind, which till then had been constantly at south-east, forced me to make several boards to approach those islands, which I passed within the distance of a league and a half. After having well determined their position, and taken bearings, in order to be able to lay down upon the plan their positions respectively to each other, I stood close to the wind, upon the starboard tack, towards the island of Trinidad, which lies nine leagues from Martin Vas, in the direction of west-by-south. These islands of Martin Vas are, properly speaking, nothing but rocks. The largest may be about a quarter of a league in circumference. There are in all three islots, separated from one another by very small intervals, and appearing, when seen from some distance, like five heads of land.

At sun-set, I got sight of the island of Trinidad, which bore west 8° north. The wind being still at north-north-west, I passed the night in making short boards, keeping on the east-south-east side of the island. When day-light came, I continued my tack towards the shore, in hopes of finding smoother water under shelter of the land. At ten in the morning, when I was only two leagues distant from the south-east point which bore north-

north-west, I perceived at the bottom of an inlet formed by that point, the Portuguese flag flying in the midst of a small fort, round which were five or six wooden houses. The sight of this flag excited my curiosity, and I resolved to send a boat ashore to learn the particulars of its evacuation, or cession, by the English; for I began already to see that Trinidad would neither afford me the wood nor water of which I stood in need. All the trees we could perceive were a few scattered over the tops of the mountains. The sea broke with so much fury, that we could not suppose it possible for our long-boats to land with any degree of facility. I therefore determined to make boards during the whole of the day, that I might find myself the next morning sufficiently to windward, to fetch the anchorage, or at least to send a boat on shore. I hailed the *Astrolabe*, mentioned what I purposed doing, and added, that there was no occasion for our observing any order in tacking, as we could make the creek of the Portuguese establishment our place of rendezvous at sun-rise. I told M. De Langle that it would then be proper for the ship the nearest the shore to send a boat to enquire what supplies the island could afford us. In the morning of the 18th of October, the *Astrolabe* being only half a league from the land, M. De Langle dispatched the pinnace, commanded by lieutenant De Vaujuas. M. De LaMartinière
and

and Father Receveur, an indefatigable naturalist, accompanied that officer. They landed at the head of the creek, between two rocks; but the surf was so high, that the boat and its crew would have perished inevitably but for the speedy assistance given them by the Portuguese. They landed the boat upon the beach, and saved every thing belonging to it except the grapnel. M. De Vaujuas counted about two hundred men at this post, of whom not more than fifteen were in uniform, the rest being in their shirts. The commandant of this establishment, which it would be improper to call a colony, since there is no such thing as cultivation, told him that the governor of Rio Janeiro had ordered possession to be taken of the Island of Trinidad about a year before. He either did not know, or affected not to know, that it had been previously occupied by the English. But no kind of dependance can be placed upon any thing that was said to M. De Vaujuas in the course of this conversation, the commandant thinking himself under the lamentable necessity of disguising the truth in every particular. He pretended that his garrison consisted of four hundred men, and that his fort was defended by twenty guns; whereas we are certain that there was not a single one mounted in the neighbourhood of the establishment. This officer was so much afraid of exposing the miserable state of his settlement,

that he would never permit M. De La Martinière, or Father Receveur, to leave the beach in search of plants. After shewing M. De Vaujuas all the outward marks of kindness and civility, he advised him to return on board, telling him that the island could furnish us with nothing; that provisions were sent every six months from Rio Janeiro; that there were hardly wood and water enough for his garrison; and that it was necessary besides to fetch both those articles from a great distance among the mountains. His detachment assisted in putting off the pinnacle.

At day-break I also dispatched a boat, commanded by lieutenant Boutin, who was accompanied by Messieurs De Lamanon and De Monneron; but I expressly forbade the former to land, if the Astrolabe's boat should reach the shore before him: in that case, he was to sound the road, and take the best plan he could in so short a space of time. M. Boutin, in consequence, only approached within a musquet-shot of the beach, the lead constantly indicating a rocky bottom, mixed with a little sand. In the mean time, M. De Monneron made a drawing of the fort as well as if he had been on shore; and M. De Lamanon had an opportunity of observing that the rocks were composed of nothing but basaltes*, and

* Basaltes is a stone of a close grain, shining when broken, striking fire with steel, and proper for the purpose of a touch-stone. (*Fr. Ed.*)

melted

melted substances, the remains, without doubt, of some extinguished volcano. This opinion was confirmed by Father Receveur, who brought on board a great number of stones, all of them volcanic, as well as the sand, which was only mixed with fragments of shells and coral. According to the report of Messieurs De Vaujuas and Boutin, it was evident that the Island of Trinidad could not furnish us with the wood and water of which we were in want. I therefore determined to steer immediately for the Island of St. Catherine, upon the coast of Brazil, the ancient refreshing place of French ships in their voyages to the South Sea. Frezier and Admiral Anson had there found ample means of supplying all their wants. It was in order that I might not lose a single day, that I gave the Island of St. Catherine a preference over Rio Janeiro, where different forms would have consumed more time than was required for the completion of our wood and water. But in shaping my course for Saint Catherine's, I wished to ascertain the existence of the Island of Ascençon, which M. Daprès lays down a hundred leagues west of Trinidad, and only 15' farther south. According to the journal of M. Poncel De La Haye, who commanded the Renommée frigate, I was convinced that several navigators, among others the enlightened Frezier, thought they had landed at Ascençon, when in reality they had only

only been at Trinidad. Notwithstanding the authority of M. Poncel De La Haye, I thought that this point of geography wanted a new light to be thrown upon it. The two days that we passed off the south side of Trinidad, enabled us to take bearings, from which M. Bernizet constructed a plan of that part of the island. It differs very little from that of Doctor Halley, which had been given to me by M. De Fleurieu. The view painted by M. Duché De Vancy is so true a representation, that it will alone suffice to prevent the possibility of any navigator, who may make the southern part of Trinidad, from being mistaken. This island presents nothing to the eye but a rock, almost entirely sterile. A little verdure, and a few shrubs, are alone to be seen in the narrow passes between the mountains. It is in one of these vallies, situated in the south-east quarter of the island, and about three hundred toises wide, that the Portuguese have formed their establishment.

Nature certainly did not intend this rock to be inhabited, neither men nor animals being able to find a subsistence upon it; but the Portuguese were afraid lest some European nation should avail themselves of the vicinage, and carry on a contraband trade with the Brasils. It is doubtless to this motive that we ought to attribute their eagerness
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to occupy an island, which is a burthen to them in every other respect.

The south latitude of the large islet of Martin Vas is $20^{\circ} 30' 35''$.

The west longitude, by lunar observations, $30^{\circ} 30'$.

The south latitude of the south-east point of the Island of Trinidad, $20^{\circ} 31'$.

The west longitude, by lunar observations, $30^{\circ} 57'$.

The 18th of October, at noon, I steered a west course for Ascension till the 24th, in the evening, when I determined to abandon my search after it. I had then run about a hundred and fifteen leagues to the westward, and the weather was clear enough to see ten leagues a-head. I can therefore affirm, that having run down the parallel of $20^{\circ} 32'$, with a view of at least $20'$ north and south, and having brought to every night after the first sixty leagues, as soon as I had passed through the space perceived at sun-set, I can affirm, I say, that the Island of Ascension does not exist as far as about 7° of west longitude from the meridian of Trinidad, between the south latitudes of $20^{\circ} 10'$ and $20^{\circ} 50'$, our view having extended over all that space*.

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* La Pérouse may be in the right in asserting that navigators have fancied themselves at Ascension, when in fact they have

On the 25th of October we were overtaken by a most violent storm. At eight o'clock in the evening

have only touched at Trinidada. Without paying any regard to the resemblance between the descriptions they have given of these two islands, a proof exists in the false positions assigned to them in the French charts, which might easily induce an indiscriminate belief of being on one or the other of them, their latitude being nearly the same, and the determination of their longitudes being then very defective; but these proofs do not suffice for the enlightened geographer, when the authentic testimony adduced by Dapès in his *Discourse du Neptune Oriental*, page 10, and the particular and very different plans of these two islands, and of their aspect given by Dalrymple, evidently prove that there is no identity between them.

If La Pérouse had placed more confidence in the notes which were delivered to him, and which may be seen in this volume (No. 10 and 12) he might have made a very simple calculation.

The west longitude of the Isle of Trinidada on the north-side is there determined at $30^{\circ} 15'$. He found by his own observations that the south-east point was only in $30^{\circ} 57'$.

The coast of America, in the parallel in question, may, according to the longitude of Rio Janeiro, which is determined at $45^{\circ} 5'$, be taken at $43^{\circ} 30'$. Dapès fixes the longitude of the Island of Ascension at 38° , as may be seen in the 12th note already quoted, because he thinks it is about 120 leagues from the coast. I have reason to believe that it is nearer. Hence it is evident that La Pérouse did not carry his search far enough, and that, having run down about seven degrees of latitude after taking his departure

ing we were in the centre of a circle of fire. The lightening flashed from every point of the horizon; and the fire called *corposanto*, or jack with a lantern, settled upon the point of the conductor. The Astrolabe, which had no conductor, had also a *corposanto* at her mast-head*. From that day

departure from Trinidad, he gave it up when on the point of attaining his object.

In addition to the testimony of the two authors, whom I have just quoted, and whose accuracy entitles them to credit, I have to say that, since this note was written, chance has thrown a navigator* in my way, who has touched at both these islands, and who, being in want of instruments to determine their respective longitude with precision, only observed their latitudes as follow :

That of Trinidad - - - 20° 22'

That of Ascension - - - 20° 38'

(Fr. Ed.)

* I am not astonished that the fire called *corposanto* should also seat itself upon the mast-head of the Astrolabe, knowing as I do, by La Pérouse's account, that that ship was never out of hail of his.

A *corposanto* is nothing but the electric fire, or matter of thunder. Every body knows that when the electric fluid enters by a point, it shews itself in the shape of a small luminous spot; and that, on the contrary, when it comes out, it has the appearance of a fiery cone. The earth is the great reservoir of the electric fire, and water is one of its best conductors. I am of opinion then, that when a low cloud negatively electrified passes over a ship, the masts and yards must

* Lépine, *Enseigne de Vaisseau*.

day the weather was constantly bad till our arrival at the island of St. Catherine ; a thicker fog enveloping

must serve as conductors, and that cones of fire in the direction of the cloud must be seen at all their extremities.

It is evident that a ship having a metallic conductor, that communicates immediately with the sea, must have a finer stream of light at it's mast-head than another which can only convey the electric fluid through wood paid with tar, which is a very bad conductor.

For the same reason a *corposanto* may sometimes be seen upon the surface of the sea. Any one who wishes to be convinced of it, has only to make the following experiments, for the result of which I can vouch, having repeated them many and many a time in my study.

Electrify a quantity of water contained in a vessel of glass, or of metal if you like it better, but in the latter case it must be insulated; then approach your finger near enough to the surface of the water not to draw sparks, but so that the water may rise; and if you are in the dark, you will see a luminous cone come out of it, and direct itself towards your finger.

In this experiment the finger produces the effect of a cloud. But it may be said, perhaps, that the sea does not contain, like the water, a superabundance of electric matter. Should this argument leave any doubt on the subject, the following experiment may be made :

Take a metal basin full of water. Let this basin communicate with the earth by a chain, or any other conductor. Then electrify strongly the outside of a coated jar, by which means the inside will be negatively electrified. Insulate the jar that you may be able to take hold of the outside without
discharging

veloping us than we could have expected to meet with on the coast of Brittany in the midst of winter. We anchored on the 6th of November between St. Catherine's and the main, in seven fathoms water, over a bottom of muddy sand;

The middle of the island of Alvaredo bearing north-east;

The islands of Flamands, south by east, and

The isle of Gal, north.

After a navigation of ninety-six days we had not a single person sick on board. Neither the change of climate, nor rain, nor fogs, had

discharging it; then hold the metallic ball at the top of the jar, at a certain distance from the surface of the water, as you before held your finger, and you will produce the same effect.

It is easy to perceive that the latter experiment is the most demonstrative. Like the sea, the water is not electrified; but communicates in like manner with the earth, while the bottom of the jar, which represents the cloud, is negatively electrified, as the cloud is supposed to be.

If, in the first experiment, you use the ball of the jar negatively electrified, you will obtain a more pointed result, because the electric fluid will make a greater effort to get from the water, which is positively electrified, to the jar which is in the contrary predicament.

This principle being once laid down, and demonstrated, serves to develop the theory of ascending thunder, a phenomenon much more common than is generally imagined; but this digression, which is foreign to my subject, would lead me too far. (*Fr. Ed.*)

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impaired the health of our crews; but it is true that our provisions were of an excellent quality, and that I had neglected none of the precautions that prudence or experience could suggest. We also took the greatest care to keep up the spirits of the ships companies by making them dance every evening, when the weather permitted, from eight o'clock till ten.

CHAPTER II.

Description of the Island of St. Catherine—Observations and events during our stay—Departure from St. Catherine's—Arrival at Conception.

THE Island of St. Catherine extends from $27^{\circ} 19' 10''$ to $27^{\circ} 49'$ south latitude. Its breadth from east to west is only two leagues; and it is only separated from the main by a channel two hundred toises over in the narrowest part. It is on the point that forms this narrow passage that is situated the city of Nostra-Senora del Destcro, the capital of the government, and the place of residence of the governor. It contains at most three thousand souls, and about four hundred houses. Its appearance is exceedingly pleasant. According to Frezier's account, this island served, in 1712, as a retreat to vagabonds,

habitations,

habitations, both on the island and continent, are all close to the sea-side. The woods that surround them are delightfully fragrant, owing to the great number of orange trees, and other odoriferous trees and shrubs that they contain. But, notwithstanding all these advantages, the country is very poor, and totally destitute of manufactured commodities; so that the peasants are almost naked, or else covered with rags. Their soil, which is very fit for the cultivation of sugar, remains unproductive for the want of slaves, whom they are not rich enough to purchase. The whale fishery is very successful; but it is the property of the crown, and is farmed by a company at Lisbon, which has three considerable establishments upon the coast. Every year they kill about four hundred whales, the produce of which, as well oil as spermaceti, is sent to Lisbon by the way of Rio-Janeiro. The inhabitants are idle spectators of this fishery, from which they derive not the smallest advantage. If the government does not come forward to their assistance, and grant them such franchises and immunities as may invite commerce to their shores, one of the finest countries in the universe will remain everlastingly miserable, and will be utterly useless to the mother country.

It is very easy to make St. Catherines. A muddy bottom is found in seventy fathoms water
at

at eighteen leagues distance in the offing, the water gradually shoaling till within four cables length of the land, where there is still four fathoms.

The usual passage is between the Island of Alvaredo and the north point of St. Catherine's Island. There is also a passage between the Isle of Gal, and the Island of Alvaredo; but with this it is necessary to be well acquainted: Our boats were so occupied during our stay that I had no opportunity of sounding it. The best anchorage is at half a league from Fort Island (*L'isle de la Forteresse*) in six fathoms, muddy bottom, the citadel bearing south 3° west, and the fort, on the great point, south 60° east. A ship lies here in the midst of several watering places, both on the island and continent, and may choose the creek which, according to the wind, is the most easy of access. This consideration is of great importance; for the navigation of long boats is very difficult in the channel, which is two leagues wide as far as the narrow passage abreast of the city. The sea is very heavy and always breaks on the lee-shore. The tides are very irregular; the flood coming in by the two channels, north and south, as far as the narrow passage just mentioned. It only rises three feet.

It appeared to me that our arrival spread great terror through the country. The different forts

fired several alarm guns, which induced me to anchor earlier than I should otherwise have done, and to send a boat on shore with an officer, to make known our pacific intentions, and our want of wood, water, and fresh provisions. M. De Pierrevert, whom I charged with this negotiation, found the little garrison of the citadel all under arms. It consisted of forty men, commanded by a captain, who immediately sent off an express to the city, where the governor Don Francisco Di Baros, brigadier of infantry, resided. He had been informed of our expedition by means of the Lisbon Gazette; and a bronze medal I sent him, left him no doubt concerning the object of our visit. The most speedy and positive orders were given to sell us whatever we stood in need of, at the lowest price; an officer was appointed to attend on each frigate; he was entirely at our command; and we sent him with the purser's steward to buy provisions of the inhabitants. On the 9th of November I hauled in towards the fortress, from which I was lying at some distance; and on the same day I went ashore with M. De Langle, and several officers, to pay my respects to the commandant of that post, who saluted me with fifteen guns. An equal number was returned from my ship. The next day I sent my boat, commanded by lieutenant Boutin, to the town of Nostra-Senora del Destero, to return my thanks to the governor for

the great abundance which, owing to his cares, we enjoyed. Messieurs De Monneron, De Lamanon, and the abbe Monges accompanied that officer, as well as M. De La Borde Marchainville and Father Receveur, sent for the same purpose by M. De Langle. They were all received in the most polite and cordial manner. Don Francisco De Baros, governor of the district, spoke French perfectly well, and his extensive information inspired the greatest confidence. He invited all the French to dinner, during which he told them that the island of Ascençon did not exist; that however, upon the credit of M. Daprès, the governor-general of the Brasils had the year before dispatched a vessel to examine all the positions formerly assigned to that island; and that the captain having seen no land, it had been expunged from the charts, in order that an ancient error might not be perpetuated *. He added, that the Island of
Trinidad

* It would be dangerous to the progress of navigation, and fatal to navigators, to adopt the method of expunging islands formerly discovered from the charts, under the pretence of their having been sought for in vain, or of their position being at any rate uncertain, in consequence of the want of means to lay them down with precision upon the charts, at the time of their discovery.

I have the greater right to express my disapprobation of such a method, as, a few pages back, I have proved that Ascençon really exists, and that those who should expunge

Trinidad had always made part of the Portuguese possessions ; and that the English had evacuated it upon the first request made to them by the Queen of Portugal ; the King of England's minister having moreover made answer that the nation had never given its sanction to the settlement, which was only an adventure of private individuals. The following day, at eleven o'clock, the boats of the *Boussole* and *Astrolabe* returned, and announced a speedy visit from Don Antonio Di Gama, major general of the colony. He did not come, however, till the 13th, when he brought me a most obliging letter from his commanding officer. The season was so far advanced, that I had not a moment to lose ; and our crews enjoyed a most excellent state of health. I had therefore flattered myself, on our arrival, that I should be able to provide for all our wants, and to sail again in five or six days ; but the southerly winds and the currents were so strong, that our communication with the land was frequently interrupted. This necessarily delayed my departure.

an island from the globe, would be in a manner responsible for the risks to which navigators who might fall in with it would be exposed by the false security inspired by the charts ; while its being laid down, even in an uncertain manner, by keeping alive the attention of mariners, may render the finding of it again a matter of greater facility. (*Fr. Ed.*)

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I had given the preference to the Island of St. Catherine, over Rio Janeiro, merely to avoid the forms to be gone through in great cities, which always occasion a loss of time; but experience taught me that it combined a variety of other advantages. Provisions of all kinds were in the greatest abundance: a large ox cost eight dollars. A hog of a hundred and fifty pounds weight, four; two turkies were to be had for a dollar; it was only necessary to cast the net, in order to haul it up again full of fish; five hundred oranges were brought on board, and sold to us for less than half a dollar; and vegetables were also at a very moderate price. The following fact will give an idea of the hospitality of these good people: One of my boats having been overset by the surf in a creek where I was cutting wood, the inhabitants who assisted in saving it, forced our half-drowned sailors to sleep in their beds, and passed the night themselves upon mats spread on the ground in the same room in which they exercised this noble hospitality. A few days afterwards they brought on board the *Bouffole* the masts, grapnel, and colours of the boat, articles highly valuable to them, and which would have been of the greatest use in their canoes. Their manners are mild; they are kind, polite, and obliging; but superstitious, and jealous of their wives, who never appear in public.

Our officers went in pursuit of game, and killed several birds of the most beautifully variegated plumage; among other, a *rollier*, of a very fine blue colour, which Buffon has not described, though in this country it is very common.

Not having foreseen the obstacles that detained us twelve days in this road, we did not send our astronomical clocks on shore, thinking that we should only pass five or six days at anchor. We had, however, little reason for regret, as the sky was constantly cloudy. The longitude of the island was consequently determined by distances from the sun to the moon. According to our observations, the most northerly point of the island of St. Catherine may be fixed at $49^{\circ} 49'$ west longitude, and $27^{\circ} 19'$ south latitude.

On the evening of the 16th, every thing being embarked, I sent my packets to the governor, who had kindly undertaken to convey them to Lisbon, where I addressed them to M. De Saint-Marc, our consul-general. Every one had permission to write to his family and friends. We flattered ourselves with hopes of sailing the following day; but the northerly winds, which would have been so favourable to us in the open sea, kept us at the bottom of the bay till the 19th of November, when I got under way at day-break. The calm, however, forcing me to anchor for a few hours,

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we did not get clear of all the islands till night was coming on.

We had bought at St. Catharine's a sufficiency of oxen, hogs, and poultry, to feed the ship's company at sea for more than a month; and we had added orange and lemon trees to our collection of other trees, which, since our departure from Brest, had been preserved in a thriving state in boxes, made under the direction of M. Thouin. Our gardener was also provided with kernels of oranges and lemons, and with seed of the cotton shrub, of Indian corn, and, generally speaking, of all the vegetables which, according to the report of navigators, the inhabitants of the islands in the South Sea were in want of, and which are more analogous to their climate and manner of living, than the productions of the French kitchen garden. Of the latter, however, we also carried out an immense quantity of seed.

The day of our departure, I gave the *Astrolabe* new signals, which were much more extensive than those we had made use of heretofore. We were about to navigate in the midst of fogs, and in tempestuous seas; and these circumstances required new precautions. I agreed also with M. De Langle, that in case of separation, our first rendezvous should be the harbour of Good Success in Lemaire's Straits, supposing we should not have passed its latitude on the first of January; and

and the second, Point Venus, in the island of Otaheite. I informed him also, that I should confine my researches in the Atlantic Ocean to *Isle Grande de la Roche*, not having time to seek a passage to the southward of Sandwich Land. I now felt much regret at not being able to begin my expedition by the east; but I did not dare to change so entirely the plan that had been adopted in France, because I should not have been overtaken by the official letters which had been announced to me, and which might contain the most important orders.

The weather was very fine till the 28th, when we had a violent gale of wind from the eastward. It was the first since our departure from France. I was pleased to see, that although our ships were very indifferent sailers, they stood the bad weather exceedingly well, and were capable of resisting the heavy seas with which we should have to contend. We were then in $35^{\circ} 24'$ south latitude, and $43^{\circ} 40'$ west longitude; and I was steering east-south-east, because I intended, in my search after *Isle Grande*, to run into its latitude at about 10° to the eastward of the position assigned to it in the different charts. I was well aware of the great difficulty of getting back again; but, in any case, I was under the necessity of making a great deal of westing, in order to arrive at Lemaire's Straits; and all the way I should advance upon that point

of

of the compass, while running down the latitude of *Isle Grande*, would bring me so much nearer to the coast of Patagonia, where I was under the necessity of getting soundings before I could double Cape Horn. I thought also that the latitude of *Isle Grande* not being perfectly determined, it was more probable that I should meet with it by plying to windward, between 44° and 45° of latitude, than if I followed a straight line in $44^{\circ} 30'$, as I might have done by running from west to east, the westerly winds being as constant in these seas, as the easterly breezes are between the tropics.

It will soon be seen that I derived no advantage from my calculations, and that after a fruitless search of forty days, during which I met with five gales of wind, I was obliged to give it up, and proceed on my voyage.

On the 7th of December I was in the supposed parallel of *Isle Grande*, in $44^{\circ} 38'$ south latitude, and 34° west longitude, according to lunar observations taken the day before. We saw sea-weed pass the ship, and during several days were surrounded with birds, but they were of the albatross and petrel species, which never approach the land, unless in the breeding season.

These weak indications of land served, however, to keep alive our hopes, and consoled us for the terribly mountainous sea in which we were navigating; but it was not without anxiety that I re-

flected I had still 35° of westing to make before I reached Lemaire's Straits, where it was of importance that I should arrive before the end of January.

I kept standing upon different tacks between the 44th and 45th deg. of latitude till the 24th of December, running down 15° of longitude in that parallel; and on the 27th I gave up the search, well convinced that *Isle Grande de la Roche* did not exist*, and that the sea-weeds and petrels did not prove the vicinity of land, since I met with birds and marine plants till my arrival on the coast of Patagonia. The chart on which the ship's place on each day is set off, will serve to shew the course I steered better than the details above given. I am convinced that the navigators who may sail hereafter in quest of the same island, will not be more fortunate than myself; but they ought only to undertake it when sailing east towards the Indian ocean. It is in that case no more difficult or

* If *Isle Grande de la Roche* had been laid down on the charts in a less conjectural manner, La Pérouse, after running down the parallel assigned to it, might have safely affirmed that it did not exist; but as its position has been so vaguely determined, according to the journals of Antoine De La Roche, and Americus Vespucius, the search made by La Pérouse only proves that it does not exist in the position assigned to it. As to the rest, I have nothing to add to the discussion contained in the nineteenth geographical note inserted in the first volume. (Fr. Ed.)

tedious

tedious to run down 30° in that parallel than in any other; and if no land be found, the ship will at least be so much farther on its way. I am fully persuaded that *Isle Grande*, like Pepys Island, is the creation of fancy *; the account of La Roche, who pretends to have seen lofty trees upon it, being entirely destitute of foundation. It is very certain, that in 45° , nothing but shrubs can be found upon an island seated in the midst of the Southern Ocean, since not a single tree is met with upon the Islands of Tristan d'Acunha, situated in a latitude infinitely more favourable to vegetation.

On the 25th of December the wind settled at south-west, and continued to blow for several days, compelling me to steer west-north-west, and to depart from the parallel I had been constantly following for twenty days. Having then passed the uttermost point assigned to *Isle Grande*

* I know that New Georgia indicated in La Roche's journal has been again found; but I am much in doubt whether the honour of that discovery ought to be assigned to him.—According to his journal, there is a channel ten leagues wide between Bird's Island and Georgia, whereas the channel is in reality only one league wide. This is a mistake rather too great for a seaman of the least experience to make, if speaking of one and the same place. It is, however, from the former land that you must reckon, in order to lay down *Isle Grande* between 43 and 44° of longitude. I crossed all the meridians from 35 to 50° , without discovering it.

in all the charts, and the season being very far advanced, I determined in future to steer the course that would give me the most westing, fearing much lest I should find myself obliged to double Cape Horn in the bad season of the year. But the weather was more favourable than I could venture to hope. The gales of wind ceased with the month of December, and January was nearly as fine as July is upon the coasts of Europe. The only winds we had were from north-west to south-west, but we could carry all our sails, and the various breezes were so completely indicated by the appearance of the sky, that we were certain of the moment when the wind would change, and were consequently always prepared to stand upon the most advantageous tack. As soon as the horizon grew misty, and clouds began to cover the sky, the wind veered from south-west to west. Two hours after it was sure to be at north-west. On the contrary, when the foggy weather cleared up, we were certain that the wind would speedily back again to west and south-west. I do not believe that in sixty-six days navigation, the wind blew from the eastward more than eighteen hours.

We had several days of calm weather, and smooth water, during which the officers of the two ships went on shooting parties, and killed a considerable number of birds, with which we

were

were almost constantly surrounded. Their sport, which was very generally productive, procured us a supply of fresh meat for our crews, and more than once it happened to us to kill enough to serve out to the whole ships company. The sailors preferred it to salt meat, and I am of opinion that it contributed infinitely more to keep them in a good state of health.

In our excursions we killed nothing but albatrosses of the great and small species, with four varieties of the petrel. These birds when skinned, and dressed in a savoury way, were nearly as good as the wild ducks eaten in Europe. They have been so well described by the naturalists who accompanied captain Cook, that I only think it necessary to give a drawing of them, that ornithologists may be convinced that we met with the very species, of which Messieurs Banks, Solander, and Foster have given descriptions highly satisfactory.

On the 14th January we at last struck ground on the coast of Patagonia, in $47^{\circ} 50'$ south latitude, and $64^{\circ} 37'$ west longitude, according to our last lunar observations. We never neglected any opportunity of making them when the weather was favourable. The officers of the ship were so well versed in them, and seconded M. Dagelet so well, that I do not think our greatest error
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in longitude can be estimated at more than half a degree.

On the 21st, we got sight of Cape Fair Weather, or of the north point of Gallegos River, on the coast of Patagonia. We were about three leagues from the land, in forty one fathom water, over a bottom of small gravel, or little argillaceous stones of the size of peas. Our longitude, observed at noon, being compared with the chart of *Cook's second voyage*, only differed by 15' which we were farther to the eastward.

On the 22d, at noon, we set the Cape of the Virgins, bearing west, four leagues distant. This land is low, with scarcely any verdure. The view given of it, by the editor of *admiral Anson's voyage*, appeared to me to be very exact, and its position is accurately determined in the chart of *Cook's second voyage*.

As far as the Cape of the Virgins, the lead constantly brought up mud, or else the small pebbles mixed with mud, which are found in the direction of the mouths of rivers: but when we came to Tierra del Fuego, we had almost always a rocky bottom, and only from twenty four to thirty fathoms water, although at three leagues distance from the land, which induces me to think that this coast is not so safe as that of Patagonia.

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The latitudes and longitudes of the different capes are determined with the greatest precision by captain Cook's chart.

The direction of the coast between these capes has been laid down from bearings accurately taken; but it has not been possible to attend much to those details in which the safety of navigation consists. Captain Cook, and all other navigators, can only answer for their own routes, and the soundings they have taken. It is very possible that when the water was smooth, they may have passed close to shoals and rocks upon which there were no breakers. This navigation consequently requires much greater caution than that of the continent of Europe.

I have entered into these details, in order to shew the degree of confidence that may be placed in charts of this kind, the most perfect, no doubt, that have been constructed while running rapidly over an immense space. It was impossible for navigators in former times, when lunar observations were not in use, to approach their accuracy. It is such, that I as firmly believe in the points we have examined, being laid down within twenty miles of the truth, as I do in the exact position of the observatories of Greenwich and Paris.

On the 25th, at two o'clock, I took bearings a league to the southward of Cape San Diego, which forms the west point of the Straits of Lemaire.

I had ranged along the land since the morning at that distance, and had followed, upon captain Cook's chart, the bay where Mr. Banks went on shore in search of plants, while the *Resolution* waited for him under sail.

The weather was so favourable, that it was impossible for me to grant the same indulgence to our naturalists. At three o'clock, I entered the straits, having doubled, at the distance of $\frac{1}{4}$ of a league, Point San Diego, where there are breakers, which do not, I believe, extend more than a mile; but having perceived others much farther in the offing, I steered to the south-east in order to avoid them. I soon perceived, however, that they were occasioned by currents, and that the reefs of Cape San Diego were a great way off.

As it blew a fresh breeze from the north, I could venture to approach Tierra del Fuego, and ranged along it within less than half a league of the land. I found the wind so fair, and the season so far advanced, that I immediately determined to give up my intention of putting in at the harbour of Good Success, and to stand on, without losing a moment, to double Cape Horn. I considered that it would be impossible to provide every thing I wanted without staying ten or twelve days; the space of time I had found at St. Catherine's to be rigorously necessary, because in those open bays, where the sea breaks with fury upon the beach,

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one half of the days are such, that a boat cannot go ashore. If this inconvenience had been accompanied by a southerly wind, which should have detained me for some time in the harbour of Good Success, the favourable season would have elapsed, and I should have exposed my ship to damage, and my crew to hardships and fatigue, very prejudicial to the success of my voyage.

These considerations induced me to steer for the island of Juan Fernandez, where I was sure of finding wood and water, with refreshments far superior to the Penguins of the Straits. I had not at that time a single person sick; I had still eighty barrels of water, and Tierra del Fuego has been so often visited and described, that I could not hope to add any thing interesting to what has already been said upon the subject.

During our run through the Straits of Lemaire, the savages, according to custom, made great fires, to induce us to anchor. There was one upon the north point of the bay of Good Success, and another upon the north point of Valentine's Bay. I am persuaded, with captain Cook, that ships may anchor indiscriminately in any of those bays, where both wood and water are to be had, though there is certainly less game than at Christmas Harbour, on account of the savages inhabiting them during a part of the year.

During our navigation in the strait, at half a league distance from Tierra del Fuego, we were surrounded by whales: it was easy to see that they had never been molested. They took no alarm at our ships, swam majestically along within pistol-shot of us; and will, no doubt, remain sovereigns of these seas, till the fishermen go to make war upon them as at Spitzbergen or Greenland. I doubt whether there be a better place in the world for the whale-fishery. The ships might lie at anchor in good bays, within reach of water, wood, antiscorbutic herbs, and sea fowl, while their boats without going a league, might kill as many whales as would make them a complete cargo. The only inconvenience would be the length of the voyage, which would require near five months for each run; and I should imagine that these latitudes can only be frequented in the months of December, January and February.

We were not able to make any observations on the currents in the straits which we entered at three o'clock in the afternoon, the moon being twenty-four days old. We were drifted rapidly to the southward till five, when the tide turned; but as we had a strong northerly breeze we stemmed it with ease.

The horizon was so misty in the eastern quarter, that we did not perceive Staten Land, from which however we were less than five leagues distant,
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since that is the whole width of the straits. We kept Tierra del Fuego close enough aboard to perceive, by the help of our glasses, the savages stirring up great fires, which is the only way they have to express their desire of seeing ships come to an anchor.

Another motive more powerful still, had induced me to give up my idea of touching at the bay of Good Success. I had long been devising a new plan for my voyage, concerning which, however, I could come to no decision, till after having doubled Cape Horn.

This plan was to repair, during the present year, to the north-west coast of America. I knew well, that if I had not received orders to do so, it was for fear I should not have time to make so long a run during the winter; for this project united an infinite number of advantages. The first was the taking of a new track, and crossing parallels in which it was possible to meet with undiscovered islands: the second was the visiting more expeditiously of all the places pointed out to me, by employing two years in the northern, and two in the southern hemisphere. As my instructions expressly said that I was at liberty to execute the King's orders in the manner that might appear to me most likely to insure the success of the voyage, I only delayed the entire adoption of my new plan,

plan, till I knew at what time I should get into the South Sea.

I doubled Cape Horn with much greater ease than I had dared to hope; and I am now convinced that this navigation is like that of all high latitudes. The difficulties we expect to meet with, are the effect of an ancient prejudice which will in time be laid aside, and which the reading of *admiral Anson's Voyage* has not a little contributed to keep alive in the minds of seamen.

On the 9th of February I was abreast of the Straits of Magellan in the South Sea, and steering for the island of Juan Fernandez. I had passed, according to my reckoning, over the pretended land of Drake; but I had lost little time in search of it, because I was convinced that it did not exist. Since my departure from Europe, all my thoughts had been directed to the tracks of ancient navigators. Their journals are so badly digested, that it is necessary in a manner to guess at their meaning; and geographers, who are not seamen, are in general so ignorant of hydrography, that they have been unable to throw the light of sound criticism upon journals which stand so much in need of it. They have consequently drawn the figures of islands, which do not exist, or which, like phantoms, vanish at the approach of modern navigators.

In 1758, admiral Drake, five days after he had sailed out of the Straits of Magellan, was assailed in the Great Western Ocean by violent gales of wind which lasted near a month. It is difficult to follow him in his different courses; but at length he got sight of an island in 57 degrees of south latitude. He put in there, and saw a great number of birds. Running afterwards twenty leagues to the northward, he fell in with other islands inhabited by savages, who were in possession of canoes. These islands produced wood, and antiscorbutic plants. How is it possible in reading this relation not to recognize Tierra del Fuego, and, probably, the Island of Diego Ramirez, situated nearly in the same latitude as the supposed Island of Drake? At that time Tierra del Fuego was not known. Le-maire and Schouten did not discover the straits that bear their name, till 1616; and being persuaded, that, in the southern, as well in the northern hemisphere, there was land extending to the vicinity of the pole, they thought that the south part of America was intersected by channels; and that they had found a second, like that of Magellan. These false ideas were very well calculated to lead admiral Drake into error, especially as he was drifted by currents, 15 or 16° to the eastward of his reckoning; as has happened since in the same seas to a hundred other

navigators. This probability becomes a certainty, when we reflect that a ship of this squadron, which made a stretch to the northward, while the admiral was making one to the southward, returned into the Straits of Magellan, out of which she had just sailed; an evident proof that she had made little way to the westward; and that admiral Drake had not got beyond the longitude of America. In addition to this, it may be said, that it is contrary to all probability, that an island remote from the continent, and in 57° latitude, should be covered with trees, while not a single ligneous plant is to be found upon Falkland's Islands, which are only in 53° ; and, although there is not an inhabitant upon those islands, nor even upon Staten Land, which is separated from the continent by a channel of no more than five leagues wide. Besides the description that Drake gives of the savages, canoes, trees and plants, agrees so perfectly with the Pecherees, and generally speaking with every thing else we know about Tierra del Fuego, that I am at a loss to conceive how Drake's Island can still exist upon the charts.

The west-south-west wind favouring my intention of running to the northward, I determined not to lose moments so valuable in this fruitless research; and continued my route towards the Island of Juan Fernandez. But having
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examined the quantity of provisions I had on board, I found that we had very little flour and bread left, because I had been obliged as well as M. De Langle, to leave a hundred barrels at Brest, for want of room to stow it away. The worms had besides got into the biscuit; and though they had not rendered it unfit to eat, had consumed about one fifth of the quantity. These several considerations made me give Concepcion a preference over the Island of Juan Fernandez. I knew that this part of Chili abounded in corn; that it was cheaper there than in many parts of Europe; and that I should find all other eatables in plenty, and at a moderate price. I consequently altered my course a little to the eastward.

On the 22d, in the evening, I got sight of the Island of Mocha, which lies about 50 leagues south of Concepcion. The fear of being drifted to the northward by currents, had made me haul in for the land; but I think that it is a useless precaution, and that it is sufficient to stand into the latitude of the Island of Santa Maria, which it is adviseable to make, taking care not to approach nearer than within three leagues, because there are sunken rocks, which lie a great way out from its north-west point.

When that point is doubled, a ship may range along the land, all the dangers being then above water, and at a small distance from the shore.

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At the same time the paps of Biobio heave in sight. These are two mountains of small elevation, of which the name indicates the form. It is necessary to steer a little to the northward of the paps, towards Talcaguana Point, which forms the western entrance of the Bay of Conception. This bay is about three leagues wide, from east to west, and the same depth from north to south; but the entrance just mentioned, is confined by the Island of Quiquirina, situated in the middle, and forming two channels, of which the eastern is the safest, and the only one in use. It is about a league wide. The western one between the Island of Quiquirina, and Talcaguana Point, is hardly more than a quarter of a league in width; is full of rocks, and is only to be attempted with a good pilot.

Bottom is found upon the coast from the Island of Santa Maria, to the entrance of the Bay of Conception. At three leagues in the offing, we had seventy fathoms water, over a bottom of black mud, and thirty, when we were shut in with the bay east and west. From the north point of the Island of Quiquirina, the water keeps shoaling to seven fathoms, within two musket-shots from the land. There is excellent anchorage all over the bay, but ships are only sheltered from northerly winds when lying abreast of the village of Talcaguana

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At two o'clock in the afternoon we doubled the point of the Island of Quiquirina; but the southerly winds, which till then had been so favourable to us, being now contrary, we were obliged to stand on different tacks, taking care to keep the lead constantly going. We endeavoured with our glasses to find the city of Concepcion, which, according to Frezier's plan, ought to have been at the bottom of the bay, in the south-east quarter; but nothing could we see. At five in the evening, pilots came on board, who told us that the city had been ruined by an earthquake in 1751, that it no longer existed, and that a new one had been built at three leagues distance from the sea, upon the banks of the River Biobio. We were told also by these pilots, that we were expected at Concepcion; and that the letters of the Spanish minister had preceded us thither. We continued to ply to windward, in order to reach the bottom of the bay; and at nine in the evening anchored in nine fathoms water, at about a league from the anchorage of Talcaguana, which we were to take up the following day. About ten, M. Postego, a captain of a frigate in the Spanish navy, came to visit me on the part of the commandant of Concepcion. He slept on board, and set off at break of day, in order to give an account of his mission. He pointed out previously the most convenient

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convenient place for us to anchor in; and before he mounted his horse, sent on board a greater quantity of fresh meat, fruit, and vegetables, than was sufficient for the whole crew, whose good state of health appeared to surprize him. Never, perhaps, had any vessel doubled Cape Horn, and arrived at Chili without having sick on board; and in our two ships there was not a single man indisposed.

At seven in the morning we got under way with all our boats towing us a-head; and anchored in the creek of Talcaguana, at eleven o'clock, on the 24th of February, in seven fathoms water, over a bottom of black mud, the middle of the village of Talcaguana bearing south, 21° west;

Fort St. Augustine south, and

Fort Galvez, near our watering place, north-west, 3° west.

From our first arrival upon the Coast of Chili, we had taken lunar observations every day, and found that our longitudes differed very little from those assigned to it by Don George Juan; but as we have reason to think the present method far superior to that which was in use in 1744, we shall place the north point of the Island of Santa Maria, in $37^{\circ} 1'$ south latitude, and $75^{\circ} 55' 45''$ west longitude; the middle of the village of Talcaguana, in latitude $36^{\circ} 42' 21''$, and lon-

longitude $75^{\circ} 20'$, according to the observations made by M. Dagelet in our astronomical tents pitched close to the sea-side. The plan of Don George Juan is drawn with so much exactness, that our operations have only served to ascertain its truth; but M. Bernizet, geographical engineer, added to it a part of the course of the River of Biobio, in order to show the spot on which the new city is built, and the road leading to it. (Atlas.)

CHAPTER III.

Description of Conception—Manners and customs of the inhabitants—Departure from Talcahuana—Arrival at Easter Island.

THE Bay of Conception is one of the most commodious harbours to be found in any part of the world. The water is smooth, and there is scarcely any current, although the tide rises six feet three inches, the flood being at its height, at the full and change of the moon, at 45 minutes after one o'clock. The bay is sheltered from all winds but the north, which in these climates only blow during the winter; that is, from the end of May to October, which is also the rainy season. The weather is constantly wet

wet while that monsoon lasts ; for the name of monsoons may, with propriety, be given to those steady gales, that are followed by southerly winds, which blow all the rest of the year, and which are accompanied by the most delightful weather. The only anchorage sheltered from the north-east wind that prevails during the winter, is off the village of Talcaguana, on the south-east shore, which is now the only Spanish settlement in the bay, the old city of Concepcion, having, as I have already said, been destroyed by an earthquake in 1751. It was situated at the mouth of the river of Saint Peter, to the eastward of Talcaguana ; and its ruins are still to be seen. They will not exist so long as those of Palmyra have done, all the houses in the country being either built of mud, or of bricks, dried in the sun. The roofs are covered with pantiles the same as in several of the southern provinces of France.

After the destruction of this city, which was rather swallowed up by the sea, than overturned by an earthquake, the inhabitants dispersed, and encamped upon the neighbouring heights. It was not till 1763, that they made choice of a new site at a quarter of a league from the river of Biobio, and at three leagues distance from old Concepcion, and the village of Talcaguana. The bishoprick, the cathedral, and the religious houses were transferred to the new city, which is of
great

great extent, because the houses are built only one story high, that they may be the better able to resist the earthquakes that happen every year.

The new town contains about ten thousand inhabitants. It is the residence of the bishop, and of the major-general, who is at the head of the military department. This bishopric confines on that of San-Jago, the capital of Chili, where the governor-general resides. It is skirted to the eastward by the Cordilleras, and extends southward as far as the Straits of Magellan; but its true limits are the river of Biobio, at a quarter of a league's distance from the city. All the country south of that river belongs to the Indians, except the island of Chiloe, and a small district round Baldivia. It is improper to give to those people the name of subjects of the King of Spain, with whom they are almost always at war. The functions of the Spanish commandant are consequently of the greatest importance. He commands both the regular troops and the militia, which gives him great authority over all the citizens, who, in their civil concerns, are governed by a corregidor. He is besides charged exclusively with the defence of the country, and obliged to fight, and to negotiate incessantly. A new administration is about to succeed the old one. It will differ little from that of our colonies, as the authority is to be divided between the command-

ant and intendant. But it must be observed that there is no supreme court in the Spanish colonies, those who are invested with the King's authority presiding also as judges in civil causes, with a few civilians to assist them. It is easy to perceive that as justice is not administered by judges equal in dignity, the opinion of the president must almost always bias that of the inferior members of the court. The consequence is, that justice is in fact administered by a single person, which must be attended with great inconvenience, unless we suppose that person void of all prejudice, free from all passions, and possessed of the most enlightened understanding.

There is not in the universe a soil more fertile than that of this part of Chili. Corn yields sixty for one; the vineyards are equally productive; and the plains are covered with innumerable flocks, which multiply beyond all conception, though abandoned entirely to themselves. All the inhabitants have to do is to set up fences round their respective possessions, and to leave the oxen, horses, mules, and sheep, in the inclosures. The common price of a fat ox is eight dollars; that of a sheep three quarters of a dollar, but there are no purchasers; and the natives are accustomed every year to kill a great number of oxen, of which the hides and tallow are alone preserved, and sent to Lima. Some meat is also
cured

cured in the Indian manner for the consumption of the small coasting vessels in the South Sea.

There is no particular disease incident to this country; but one which I dare not name is very common. Those who are fortunate enough to escape it, live to a very great age. There are at Conception several persons who have completed a century.

Notwithstanding so many advantages, this colony is very far from making the progress that might be expected from a situation so favourable to an increase of population; but the influence of the government incessantly counteracts that of the climate: prohibitive regulations exist from one end of Chili to the other. This kingdom, of which the productions, if carried to their highest pitch, would feed half Europe; of which the wool would suffice for the manufactures of France and England; and of which the cattle, if salted down, would produce an immense revenue; this kingdom, I say, is entirely destitute of commerce. Four or five small vessels arrive every year from Lima, with sugar, tobacco, and a few articles manufactured in Europe, which the unfortunate inhabitants can only purchase at the second or third hand, and after immense duties have been paid upon them first at Cadiz, then at Lima, and lastly on their entering Chili. They can only give in exchange wheat, which is so cheap, that

the cultivator feels no desire to clear his waste land, tallow, hides, and a few planks; so that the balance of trade is always against Chili, which with its gold *, its mines, and its trifling articles of barter, is unable to pay for the sugar, the Paraguay tea, the tobacco, the cloth, the linen, the cambrick, and the commoner kinds of hardware, which it consumes.

From this very brief statement, it is evident that if Spain does not change its system; if the liberty of commerce be not authorized; if the duties paid upon foreign commodities be not reduced; if the government in short will not believe that a very small impost upon an immense population is more productive of revenue than excessive duties which annihilate that consumption, the kingdom of Chili will never reach that pitch of prosperity which might be expected from its situation.

Unfortunately this country produces a small quantity of gold. Almost all the rivers being auriferous, the inhabitant by washing the earth can earn, it is said, half a dollar a day; but as provisions are very abundant, he has no real want to

* According to the information I received, the gold collected annually in the bishoprick of Concepcion, may be estimated at two hundred thousand dollars. There are single plantations at St. Domingo, which produce as large an income.

incite him to labour. Without communication with foreigners, and unacquainted with our luxury and arts, he can desire nothing with sufficient energy to overcome his sloth. The ground therefore lies waste, the most active of the natives being those who devote a few hours to the washing of the sand of their rivers, which exempts them from the necessity of learning any trade. The consequence is that the houses even of the richest inhabitants are bare of furniture, and that all the workmen at Conception come from foreign parts.

The dress of the women consists of a plaited petticoat of those old-fashioned gold and silver stuffs formerly manufactured at Lyons. These petticoats which are reserved for gala days, may, like diamonds, be entailed in a family, and descend from the grand-mother to the grand-daughter. Such dresses are, however, confined to a small number of females, the rest having hardly wherewithal to hide their nakedness.

Sloth, still more than credulity and superstition, has peopled this kingdom with nuns and monks, the latter of whom enjoy greater liberty than in any other country in the world. The misfortune of having nothing to do, the want of family ties, the profession of celibacy, without being separated from the world, and their living in the convenient retirement of their cells, has

rendered, and could not fail to render them, the greatest profligates in America. Their effrontery is inconceivable. I have seen some of them stay till midnight at a ball, aloof indeed from the good company, and seated among the servants. These same monks gave our young folks more exact information than they could get elsewhere concerning places with which priests ought only to have been acquainted in order to interdict the entrance.

The common people of Conception are much addicted to thieving, and the women are exceedingly easy of access. They are a degenerate and mongrel race; but the inhabitants of the first class, the true-bred Spaniards, are polite and obliging in the extreme. I should be wanting in gratitude, if I did not paint them in colours suitable to their character, which I shall endeavour to make known, while giving an account of our own transactions.

I was scarcely at anchor a-breast of Talcaguana, when a dragoon brought me a letter from M. Quexada, commandant *pro tempore*, in which he told me, that we should be received like fellow-countrymen. He added, with great politeness, that the orders he had received in that respect, were conformable to the sentiments of his heart, and to those of all the inhabitants of Conception. This letter was accompanied by refreshments of all sorts, which every one hastened to send on board. The quantity was so great, that we could neither consume them, nor knew how to stow them away.

Obliged

Obliged to attend in the first place to the refitting of my ship, and to the depositing of our astronomical clocks and quadrants on shore, I could not go immediately to return my thanks to the governor. I was impatient for an opportunity of acquitting myself of that duty, but he was beforehand with me, and came on board, attended by the principal officers of his colony. The following day, I returned his visit, accompanied by M. de Langle, and several of the officers and scientific men. We were preceded by a detachment of dragoons, the commanding officer of which had stationed half a troop at Talcaguana. Ever since our arrival, both they and their horses were at our command. M. Quexada, M. Sabatero, commandant of the artillery, and the town-major, came to meet us at a league's distance from Concepcion. We all alighted at the house of M. Sabatero, where an excellent dinner was put upon the table; and at night there was a splendid ball, to which the principal ladies of the place were invited.

The dress of these ladies, very different from that to which our eyes were accustomed, was painted by M. Duché de Vancy. A plaited petticoat which leaves half the leg exposed, and which is tied a great way below the waist; stockings striped red, blue, and white; shoes so short, that the toes are bent double, which

makes the foot appear nearly round; such is the habit of the ladies of Chili. They wear their hair without powder, and divided behind into small braids, which hang down their backs. Their corset or bodice is generally of gold or silver stuff, and is covered with two short cloaks, the first of muslin, and the second which is worn over it, of wool of different colours, blue, yellow, or pink. With these woollen cloaks they cover their heads when they are in the streets and the weather is cold; but when in a room they usually lay them on their knees; and there is a game played with the muslin cloak, by shifting it about incessantly, at which the ladies of Conception display a great deal of grace. They are in general pretty, and so charmingly polite, that there is certainly no maritime city in Europe where foreign navigators are received with so much kindness and civility.

About midnight the ball was at an end. As the houses of the commandant and of M. Sabatero could not contain all the French officers and passengers, the inhabitants pressed us to accept of beds; and in this manner we were quartered in the different parts of the town.

Before dinner, we had been to pay visits to the principal citizens, and to the bishop, a man of great sense, of agreeable manners, and of a charity of which the Spanish bishops afford frequent

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Dresses of the 18th



Dresses of the Inhabitants of



Inhabitants of La Concepcion.

quent examples. He is a Creole, born in Peru, was never in Europe; and is solely indebted to his merit for his elevation. He talked to us of the regret which major-general Higuins would feel at being detained upon the frontiers by the Indians during our short stay in his government. The favourable report made of that officer by every one, and the general esteem in which he was held, made me lament the circumstances that occasioned his absence. A courier had been dispatched to him, and his answer, which was brought while we were still at Conception, announced his speedy return. He had just concluded a glorious peace, that was highly necessary to the people of his government, their distant habitations being exposed to the ravages of savage nations, who massacre the men and children, and make the women prisoners.

The Indians of Chili are no longer those Americans who were inspired with terror by European weapons. The increase of horses, which are now dispersed through the interior of the immense deserts of America, and that of oxen and sheep, which has also been very great, have converted these people into a nation of Arabs, comparable in every respect to those that inhabit the deserts of Arabia. Constantly on horseback, they consider an excursion of two hundred leagues as a very short journey. They march, accompanied by their

flocks and herds; feed upon their flesh and milk; and sometimes upon their blood*; and cover themselves with their skins, of which they make helmets, cuirasses, and bucklers. Hence it appears that the introduction of two domestic animals has had a decisive influence upon the manners of all the tribes which inhabit the country from St. Jago to the Straits of Magellan. All their old customs are laid aside; they no longer feed on the same fruits, nor wear the same dress; but have a more striking resemblance to the Tartars, or to the inhabitants of the banks of the Red Sea, than to their ancestors, who lived two centuries ago.

It is easy to conceive how formidable such people must be to the Spaniards. How is it possible to follow them in such long excursions? How is it possible to prevent assemblages which bring together in a single point nations scattered over four hundred leagues of country, and thus form armies of thirty thousand men.

M. Higuins has succeeded in gaining the good will of these savages, and has rendered the most signal service to the nation that has adopted him; for he was born in Ireland, and belongs to one of those families that are persecuted on account of their religion, and their old attachment to the house of Stuart.

* I have been assured that they sometimes bleed their oxen and horses, and drink the blood.

I cannot deny myself the pleasure of making known this worthy officer, whose manners are so much to the taste of every country. Like the Indians, I felt an affection for him after the first hour's conversation. His return to Conception followed close after his letter; and I was scarcely informed of it, when he arrived at Talcahuana. Thus was my visit again anticipated. But a major-general of cavalry is sooner on horseback than a French sea officer; and M. Higuins, on whom the country depended for its defence, was possessed of a degree of activity not easily to be matched. His kindness, if possible, exceeded that of M. Quexada. There was so much of truth in his manner, and his affection for all the French was so great, that no words could express our sense of gratitude. As we were under obligations to all the inhabitants, we resolved to give a general entertainment before our departure, and to invite all the ladies of Conception. A large tent was pitched by the sea-side, and we gave a dinner to a hundred and fifty persons of both sexes, who had complaisance enough to come three leagues to see us. The dinner was followed by a dance, a small display of fire-works, and a paper balloon, large enough to afford an agreeable spectacle.

The following day, the same tent served us for the purpose of giving a great dinner to the crews
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of both frigates. We all ate at the same table. M. De Langle and myself were at the head, and each officer, down to the lowest sailor, was seated according to the rank he held on board. Our dishes were wooden bowls. Gaiety was depicted in the countenance of all the sailors, who looked better, and were a thousand times happier, than the day of our departure from Brest.

The major-general wishing, in his turn, to give an entertainment, we all repaired to Conception, except the officers on duty. M. Higuins came out to meet us, and conducted our cavalcade to his house, where a table of a hundred covers was laid; to which all the officers and inhabitants of note were invited, as well as several ladies. Between the courses, a Franciscan monk, who had the gift of improvising, recited Spanish verses, to celebrate the union that prevailed between the two nations. At night there was a ball, to which all the ladies repaired dressed in their finest clothes; and a very pretty ballet was danced by officers in masks. It would be impossible to produce a more delightful *fête* in any part of the world. It was given by a man adored in the country, to foreigners of the nation which had the reputation of being the most gallant in Europe.

But these diversions, and this good reception, did not make me lose sight of my principal object. On the day of our arrival I had given notice that

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I should sail on the 15th of March, and that if our vessels should be refitted, and our provisions, wood and water put on board before that time, every one should be at liberty to go and amuse himself on shore. Nothing could be better calculated to create dispatch than this promise, of which I feared the effect as much as the sailors desired it, because wine is very common at Chili; and because every house in Talcaguana is a tavern, and the women of the lower classes almost as complaisant as at Otaheite. No disturbance, however, took place; nor did my surgeon make a report of any bad consequences resulting from this indulgence.

During our stay at Talcaguana, M. Dagelet regularly made comparisons to ascertain the rate of going of our time-keepers, with which we were exceedingly well satisfied. Since our departure from France, No. 19 was found to have lost only $3\frac{1}{2}$ " per day on the mean movement of the sun, which differs only half a second from its daily rate at Brest, and one second, on comparing it with that at which it went at Teneriffe. The small time-keepers, No. 25 and No. 29, varied so materially, as not to deserve our confidence.

On the 15th, at day-break, I made the signal to prepare to sail; but the wind had unfortunately settled at north. It had been constantly between south-south-west and south-west since our first arrival

rival in the road. The breeze generally sprang up at ten o'clock in the morning, and gave over blowing at the same hour in the evening, dying away sooner, if it had begun at an earlier hour; and on the contrary, lasting till midnight, if it had only begun at noon; so that there was about twelve hours of wind and a calm of equal duration. This rule held good till the 15th, when the wind, after a flat calm and excessive heat, settled at north. It blew a very fresh gale from that quarter, with a great deal of rain during the night between the 15th and 16th; but on the 17th, towards noon, a light breeze sprang up from the south-west, with which I got under way. It was very faint, and only carried us two leagues out of the bay, where we remained completely becalmed in a very heavy swell of the sea, occasioned by the late northerly gale. We were all night long surrounded by whales, which came so close to our ships, that they threw water on board from their spiracles. It is worthy of remark, that no inhabitant of Chili ever harpooned a single one. Nature has bestowed so many good things on the country, that several centuries will probably elapse before that branch of industry is cultivated.

On the 19th, a southerly wind enabling me to gain an offing, I shaped my course to the eastward of the Island of Juan Fernandez, which I did not
make,

make, because its position having been fixed by the observations of Father Feuillée at Conception, it is impossible that there can be an error of 10' in longitude.

On the 23d, I was in $30^{\circ} 29'$ south latitude, and $85^{\circ} 51'$ west longitude, according to our time-keeper No. 19, of which the rate of going, since our departure from Conception only, was to exactly equal to that of No. 18, on board M. De Langle's ship, that there was not a difference of two minutes of a degree in their results till our arrival at Easter Island. It was not the same in the cold climate of Cape Horn. It appears, that the table of temperature delivered to M. Dagelet at Paris by M. Berthoud, was not exact; and the difference was so considerable, as to occasion, in No. 18, an error of longitude of more than a degree between Lemaire's Straits and the coast of Chili.

On the 24th, the wind settled at east, and did not vary 5° till we were within about a hundred and twenty leagues of Easter Island.

On the 3d of April, being in latitude $27^{\circ} 5'$ south, and longitude 101° west, we had the wind from north-east to north-west. We also saw several birds, the only ones we had met with since we passed by the Island of Juan Fernandez; for two *taille-vents*, seen in a run of six hundred leagues, are not worthy of mention. This variety
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of winds is the most certain sign of land ; but natural philosophers will perhaps be puzzled to tell how the influence of a small island, in the midst of an immense sea, can extend à hundred leagues. At the same time, it is not sufficient for a navigator to presume that he is at that distance from an island, if nothing indicates the point of the compass, in which he may expect to meet with it. The direction of the flight of birds after sunset, never taught me any thing ; and I am perfectly convinced that they are guided in all their movements through the air by the allurements of their prey. At the fall of night, I have seen oceanic birds direct their flight towards ten different parts of the horizon ; and I do not believe that the most enthusiastic augurs would have dared to draw any conclusion from their flight.

On the 4th of April, when I was at no more than sixty leagues distance from Easter Island, I saw no birds, and the wind was at north-north-west. It is probable that if I had not known the position of the island to a certainty, I should have thought that I had passed it, and should have put about. I made these reflections on the spot, and cannot help confessing that the discovery of islands is only due to chance, and that very often the most sagacious calculations have only served to put navigators out of their way.

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On the 8th of April, at two in the afternoon, I got sight of Easter Island which bore west 5° south, distant twelve leagues. The sea was high, with the wind at north; for four days it had never blown steadily, but had shifted about by the west from north to south. I believe that the proximity of a small island was not the only cause of that inconstancy, it being probable that the trade wind is not regular at this time of the year in the latitude of 27° . It was the east point that I perceived. I was precisely in the same place where, in 1786, Davis fell in with an island of sand, and twelve leagues farther, with land to the westward, which captain Cook, and Mr. Dalrymple, have supposed to be Easter Island, found again in 1722 by Roggewein. But those two seamen, though very well informed, have not sufficiently considered what Waffer relates. He says, (page 300 of the Rouen edition) "That captain Davis, having taken his departure from the Gallapagos, with the intention of returning to Europe by Cape Horn, and meaning to touch at Juan Fernandez only, felt a terrible shock in latitude 12° south, and thought that he had struck upon a rock. He had constantly steered south, and according to his reckoning was at a hundred and fifty leagues distance from the continent of America. He afterwards learned that at that very point of time there had been an earthquake

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at Lima. Having recovered from his alarm, he continued to run south, south-by-east, and south-east, till he reached latitude $27^{\circ} 20'$; and he relates that at two o'clock in the morning, the people stationed on the fore-castle, heard the sea break upon a beach. He brought to till daylight, when he saw a small island of sand, with no rock near it. He ran within a quarter of a mile of it, and about twelve leagues farther to the westward saw land of considerable extent, which was taken for a cluster of islands, on account of the intervals between the different capes." Davis continued his course towards Juan Fernandez without examining it; but Waffer says, "that this little island of sand lies five hundred leagues from Copiapo, and six hundred from the Gallapagos." The impossibility of this result has not been sufficiently attended to: if Davis, being in 12° south latitude, and a hundred and fifty leagues from the coast of America, made good a south-south-east course, as Waffer relates; as it is evident that this captain of freebooters must have steered a course with an easterly wind, which blows very frequently in those latitudes, in order to fulfil his intention of going to Juan Fernandez, we may conclude with M. Pingré that there is a mistake of a figure in Dampier's quotation, and that Davis's Land is only two hundred leagues, instead of five hundred from Copiapo. It would
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then be probable, that Davis's two islands are those of Saint Ambrosio and Saint Felix, a little north of Copiapo; but the pilots of the freebooters were not so nice in their observations, and scarcely ever found the latitude within less than 30 or 40'. I would have spared my readers this little geographical discussion, if I had not had the opinion of two justly celebrated men to combat. I must, however, observe, that captain Cook was in doubt, and that he says he would have decided the question, if he had had time to make a run to the eastward of Easter Island. As I have run down three hundred leagues in that parallel, and have not seen the island of sand, I think that no doubt ought any longer to be entertained, and that the problem is fairly solved *.

During

* In adopting the solution of the problem discussed by La Pérouse, I feel it incumbent on me to enter more at large into the proofs that result from the journals of different navigators.

It appears certain, as Pingré, Cook, and La Pérouse remark, that there is a mistake of a figure in Dampier, and that the supposed Land of Davis, can only be at two hundred leagues from the coast of America.

I agree with La Pérouse, that the observations taken of longitude in Davis's time were so erroneous, that the latitudes are alone to be depended upon. It is then after what Waffer relates, that the route of Davis may be traced from his departure from the Gallapagos Islands.

Davis, after leaving the Gallapagos Islands, stood to
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During the night I ranged along the coast of Easter Island, at three leagues distance. The weather was clear, and the wind had chopped round

the southward as far as 12° south latitude, where he felt a terrible shock, &c. He had constantly steered a south course, and was then a hundred and fifty leagues from the continent of America.

By marking this first point upon the chart it will appear that he was in 87° west longitude, or thereabout.

He continued his course south, south-by-east, and south-east as far as the land which he discovered in $27^{\circ} 20'$ south latitude.

According to Davis's route thus traced he must have really been about two hundred leagues from Copiapo, and six hundred from Gallopagos, or 1° to the south-east of the south point of the position assigned in the French charts to the Islands of Saint Felix and Saint Ambrose; it is already evident that the extensive land which Davis perceived twelve leagues to the westward, must be the islands of Saint Felix and Saint Ambrose.

The English charts place these islands in 15° south latitude.

The French in 25° .

Those of Green, in from $26^{\circ} 20'$ to 27° .

Cook acknowledges that he missed the true latitude of these islands, by rather depending upon the tables of latitudes and longitudes, inserted in *Robertson's Elements of Navigation*, than in Green's chart. He saw certain signs of land in the vicinity of 25° south latitude.

Cook, when in $25^{\circ} 50'$ and $25^{\circ} 30'$, could neither see Davis's Land, which does not exist, nor the Islands of Saint-Felix, and Saint-Ambrose, which must exist in the 27th degree, and of which he had indications.

round from north to south-east, in less than three hours. At day break, I steered for Cook's Bay, which of all those in the island is the best sheltered from easterly winds. It is consequently only open to the west; and the weather was so fine, that I was in hopes it would not blow from that quarter for several days. At eleven o'clock I

La Pérouse, in coming from the eastward, and running down three hundred leagues in the parallel of Easter Island, could neither see Davis's Land, nor the Islands of Saint-Felix and Saint-Ambrose, of which the longitude is from 26° to 27° to the eastward of that island.

It is evident, as captain Cook and Dalrymple thought, that Easter Island, found again by Roggewein, in 1722, cannot be Davis's Land.

It is evident that the Islands of Saint Felix and Saint Ambrose cannot exist in the position assigned to them in the English charts, for as Cook remarks, Davis would have met with them in his route.

It is evident that the Islands of Saint-Felix and Saint-Ambrose cannot exist in the position assigned to them in the French charts, a position conformable to that laid down by Robertson; for then captain Cook would have found them.

It appears then demonstrated that Davis's Land does not exist; but that islands exist in the 27th degree of south latitude, at about two hundred leagues from Copiapo, which islands are no other than those of Saint-Felix and Saint Ambrose, badly laid down in all the charts; and that these islands are the supposed Land of Davis; such at least, is the opinion I have formed, after consulting the journals of different navigators. It is also that of a much esteemed navigator of modern times—I mean Bougainville. (*Fr Ed.*)

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was only a league from the anchorage. The *Astrolabe* had already let go her anchor, and I dropped mine very near her; but the bottom shelved so suddenly that neither of them held, and we were obliged to heave them up and make two boards in order to regain the anchorage.

This accident did not damp the ardour of the Indians. They swam after us till we were a league in the offing, and came on board with a smiling look and an air of security which gave me a high opinion of their disposition. Men, more suspicious than they, would have been afraid, when we got under way again, of being carried away from their native land. But the idea of such an act of perfidy never seemed to present itself to their mind. They were in the midst of us naked and without arms, having only a bit of pack-thread tied round their loins to confine a bundle of grass which concealed their private parts.

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